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Established 1835 — Railway & Commercial Gazette

Vol. CCXL No. 6147 — LONDON, JUNE 12, 1953 — PRICE 8d

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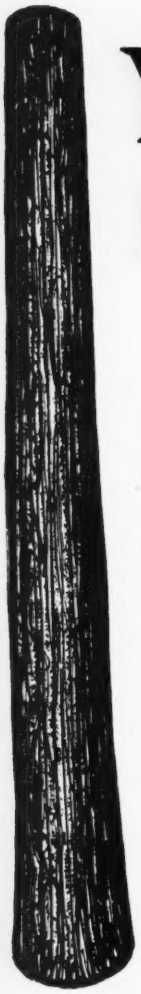

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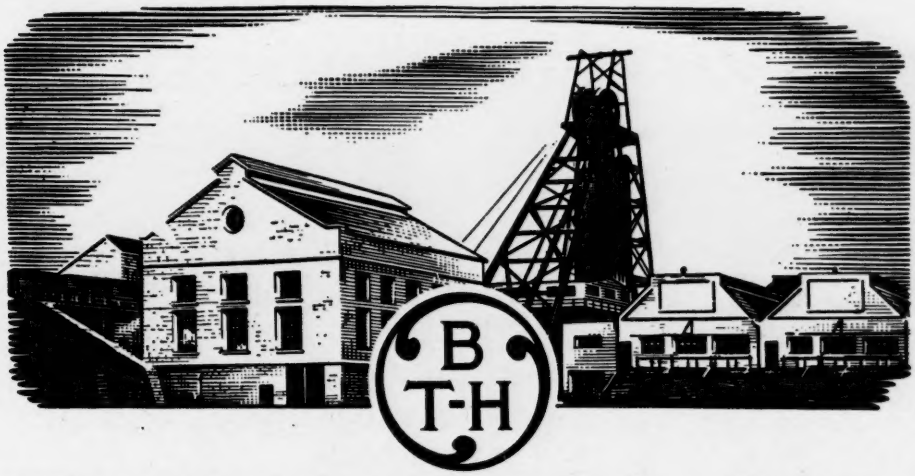

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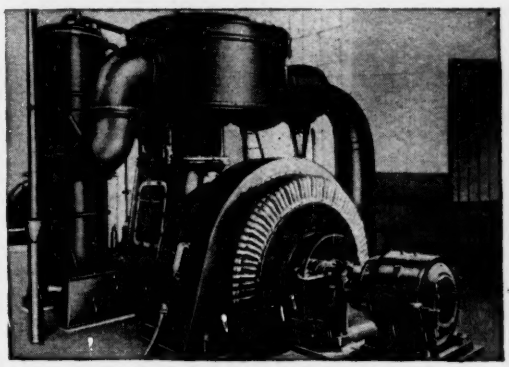

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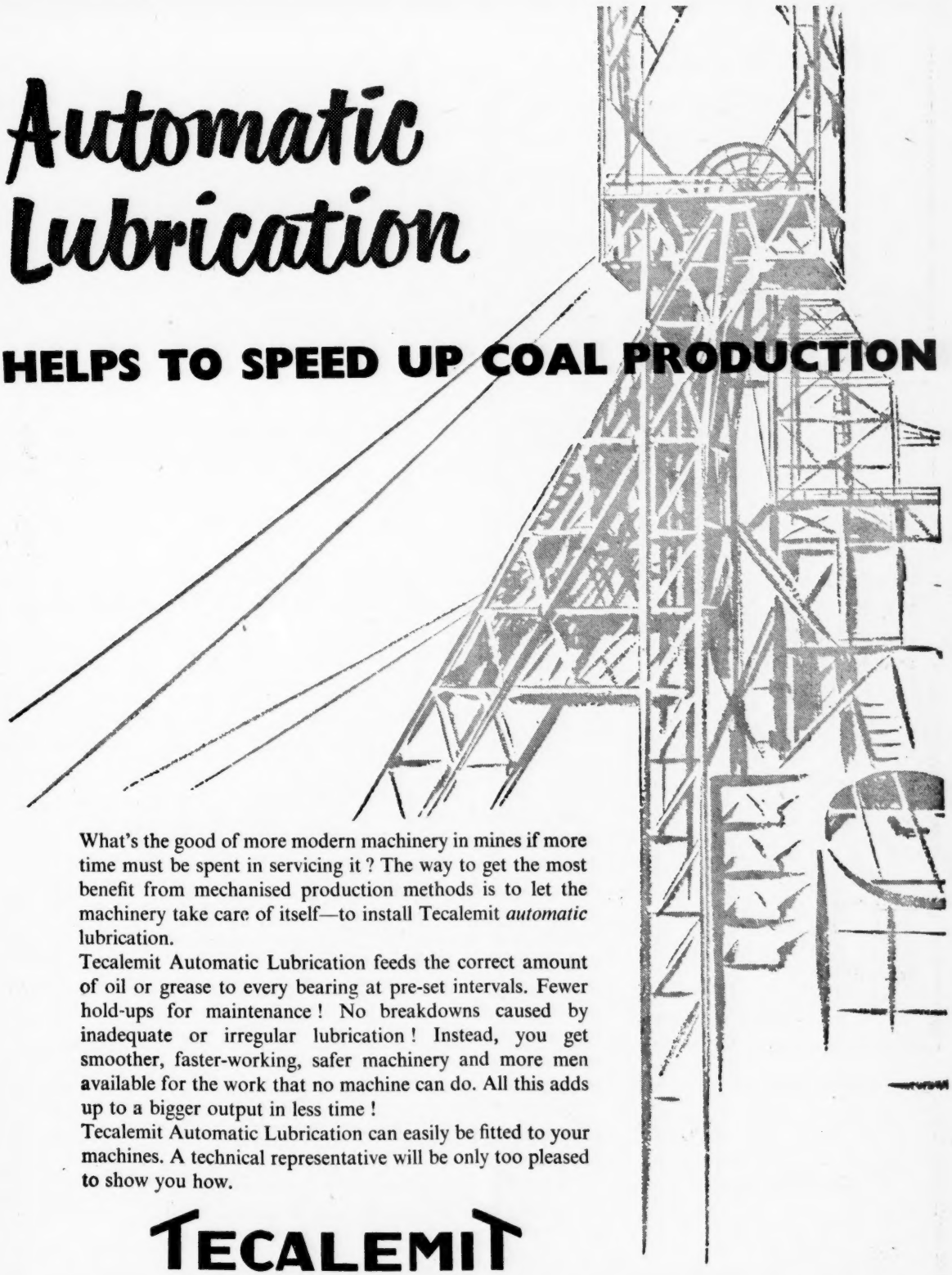

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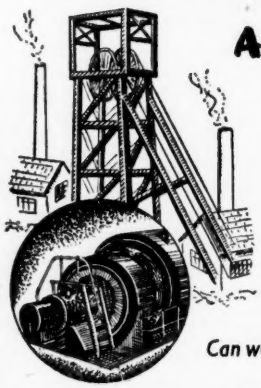

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The Mining Journal

Established 1835

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NOTES AND COMMENTS

Sir Ernest Oppenheimer on the Northern Rhodesian Copper Industry

Sir Ernest Oppenheimer, chairman of the Anglo American Corporation of South Africa, in his annual statement published in advance of the meeting to be held in Johannesburg on June 19 makes some interesting and apposite comment on the crucial issues affecting the outlook for the Northern Rhodesian copper industry. Similarly, his remarks regarding the changing pattern of mining finance and the substantial part the Anglo American Corporation is playing in financing its affiliate companies, will also repay study. But it is the outline which he sketches for the development of the copper industry in Northern Rhodesia and in the growth of the international character of the company's activities which command even greater general attention.

We see in his statement evidence of the Corporation's strong support for the development of the new Central African Federation. He foresees big extensions in the copper industry of Northern Rhodesia, and with the assistance to be expected from the new electric generating plants in the Congo and the energetic development of the Wankie coalfield, of which the Anglo American group now assumes the responsibility of management, provision of sufficient power, thermal and electric, to meet the industry's full requirements by 1957. Three years later, however, the growing demands for power by the copper industry promise to outstrip available power resources and to necessitate the development of the great hydro-electric projects at Kafue and the Kariba Gorge. What this may mean to international copper supplies in the way of increased output from the Territory he did not develop. More particulars may be available when the annual meeting of the Company is held, but clearly the increase is expected to be large.

Recent developments in the Northern Rhodesian field, and the need to adjust the conflicting interests of the European and native African operatives, involving as they do the question of the retention or relaxation of the colour bar, naturally came under the chairman's purview and his remarks on this issue will command general attention, both in the Southern Continent and in the wider field of international interest. He clearly is of the opinion that no very great change in the present order of things is possible, mainly because the number of Africans qualified for and capable of doing higher classes of work is very small and the rate at which skilled labour can be developed depends upon the training and help which the European employees are able and willing to extend to the native Africans. The question is now the subject of exploratory discussions with the European's Union. Representatives of this latter should, he points out, realize that given general harmony the capacity for expansion is very great, sufficient indeed to ensure the future, not merely of the European employees and their dependents, but to provide potential employment for large numbers of new European settlers.

Meanwhile, in Sir Ernest's opinion, recent developments have outstripped present economic potentialities. He regards the arbitrators award, over which the major controversies have arisen, as unfortunate, resulting in wage rates not only in Northern Rhodesian but in other territories being forced up to a new level which the efficiency of the average African worker does not justify as yet, and his elementary needs do not require. While the copper mines at present can afford these wage rates the rest of the country cannot do so, and consequently, as the country is a poor one except for its minerals, industrial development in other directions is liable to be held back in consequence. Obviously unless some measure of co-operation between the European and native Unions can be secured the industry will be liable to a repetition of the strikes which have already curtailed the potential increase in production which might have been expected.

Sir Ernest also referred to the formation of the Commonwealth Development Finance Company Limited, formed by the initiative of the Bank of England—which being a nationalized institution means the British Government—and which enjoys the support of finance, mining, industrial and shipping houses of the Commonwealth, and which should in a measure supply the mobilization of the financial power of the Commonwealth which seems to us so necessary a policy if the potentialities of a new Elizabethan Age are to be fully realized. The international expansion of the interests and influence of the Anglo American Corporation of South Africa is further illustrated by its participation in the Anglo Canadian Syndicate, with its concessions in Newfoundland and Labrador for the investigation of hydro-electric and petroleum potentialities in the Canadian field.

The Future of Nuclear Energy in the U.K.

In his Presidential address to the Fifth British Electrical Power Convention at Torquay on Tuesday this week, Sir John Hacking, M.I.E.E., deputy chairman (operations) of the British Electricity Authority, said that he expected this country in the near future to forward plans to consume natural uranium on a scale which will make "a significant contribution" to British electrical energy supplies of 15 to 20 years hence. During the 100 years from 1814 to 1913, direct exports of coal and coke totalled 1,700,000,000 tons. This amount of exported material would, he said, have been sufficient to provide 40 per cent of the United Kingdom's annual requirements for two decades at the present scale of consumption. It was not suggested that exportation of coal should not have taken place, for the national industrial supremacy of this century was built up by this means; nevertheless, at the present standard of coal reserves and supply, the policy of the continued exportation of coal might be questioned.

Dealing with improvements in fuel utilization, Sir John pointed out that in the United Kingdom in 1952 nearly 207,000,000 tons of coal were utilized, as well as oil and petrol supplies equivalent to approximately 23,000,000 tons of coal. The substantial improvements made in various forms of electrical lighting methods had resulted in fuel economies that in turn had played an important part in increasing industrial output.

On the railways the replacement of steam haulage by diesel locomotives offered scope for substantial fuel economy of the order of 9,000,000 tons of coal per annum for complete electrification. The other 50 per cent of the fuel, which was productive of mechanical power, was attributable almost entirely to industry. In 1951, this fuel amounted to 11,000,000 tons of coal, coke and equivalent oil used directly, and 12,000,000 tons used as electricity. Electrification had brought about a major economy in the industrial field by replacing inefficient plant, thus leading to greater output and a superior quality of product.

Yet the present competitive picture presented between solid fuels, gas and electricity for heating purposes arose solely through the form of this country's main source of energy—coal. This lack of fusion would obviously disappear were coal to be replaced by "an abundant new source of energy such as nuclear fission." It was estimated that heating in all its forms accounted for approximately 30-35 per cent of public consumption of electricity, the remainder being consumed in the "unchallengeable fields" of lighting, mechanical power, and in electrolytic processes.

The Ridley Committee had expressed the view that by 1961 the inland demand for coal might approximate some 230,000,000 tons, and the gap in coal production, and possible future consumption, presented a considerable problem. One future possibility was the underground gasification of thin coal seams which would provide a further source of fuel for electrical generation using gas turbines, but present indications did not suggest that it was likely to reach significant proportions. In addition, the full development of the known potential hydro-electric resources of Great Britain would produce additional energy equivalent to an annual consumption of 3,000,000 tons of coal. An optimistic view placed a possible saving of approximately 2,000,000 tons per annum on the development of wind and tidal power.

There remained the nuclear sources of energy. It had been indicated that the capital cost of a power station using natural uranium was unlikely to exceed twice that of a conventional steam power station. Thus it was clear that a stage had been reached at which the erection of at least one large-scale experimental plant was well justified.

A further optimistic indication of the possible future widespread use of nuclear energy was that world reserves of uranium were many times in excess of the known reserves of coal and oil. The present task was to find ways of eking out current fuel resources while simultaneously accelerating nuclear development.

Benefit of South African Gold Mines to Adjacent Territories

The native labour employed in the South African gold mining industry benefits territories outside the Union to the extent of nearly £4,000,000 per annum. This assessment is made according to figures issued by the Transvaal Chamber of Mines through the Anglo American Corporation of South Africa, and excludes the cost of supplies required by the recruiting organizations. The majority of these supplies are purchased in the territories wherein recruiting is carried on.

One of the largest individual amounts is received by Portuguese East Africa, which each year receives a sum considerably in excess of £1,000,000 in gold as a result of the voluntarily deferred pay of the natives recruited in the territory. When a native mine employee returns to the territory at the termination of his contract with the South African mines, the Portuguese Administration pays him his savings in *escudos*, and is thus directly aided with its foreign exchange.

The annual wage bill for native labour on the gold mines is approximately £15,500,000, of which sum it is understood that a little under half is earned on the goldfields of the Orange Free State. Of this sum, approximately £1,500,000 goes to the native tribal reserves in the Union of South Africa, and to Bechuanaland, Swaziland and Basutoland. More than £800,000 of this figure represents savings amassed by the natives whilst serving on the mines, and a further £605,000 is sent home by the native employees in the form of remittances.

In addition to this latter sum, native mineworkers take back to the tribal territories large sums in voluntary savings which cannot be recorded or indeed estimated, as they are not handled by any recruiting organization or mine management.

British territories in Central Africa receive approximately £1,000,000 per annum through money taken home by employees returning from the mines, and this sum is supplemented by private savings which again cannot be estimated.

Apart from the direct or indirect financial benefits received by the various territories, the native recruiting organizations maintain radio communication between their offices, and in many instances this provides the sole means of communication in the region. In such cases, the territorial government makes use of the transmitters and receivers for official purposes, without cost.

Portugal

(From Our Own Correspondent)

Oporto, June 5.

There is little fresh to report. A mild interest has recently been shown by the U.S.A. in high-grade scheelite, and some activity in prospecting for the complex Ta_2O_5/Cb_2O_5, has been evinced by those who see in this somewhat elusive element a means of keeping going until reduction in the export taxes on WO_3 and SnO_2 enable Portugal to compete with other producing countries in the free world markets which may be expected in the near future. From January to the end of April only two countries bought Portuguese tungsten concentrates, the U.S.A. 606 tonnes and the U.K. 437 tonnes.

Further to your correspondent's notes in *The Mining Journal* of April 24, a recent development in the so-called "Tin Scandal" was the arrest of a director of the firm of forwarding agents commissioned to deal with the export of tin ore, on a charge preferred against his firm by the insurance company. This charge alleged that a Certificate of Weight was issued for tin ore when the material was not tin ore. As forwarding agents never concern themselves with the nature of the contents of the sealed bags delivered to them for export, merely entering on their certificate of weight the description given on the certificate of transit, which is issued by the exporter, and endorsing on the weight certificate "Metal Content not known," this dubious charge, which led to the arrest of a director of a most respectable and well known firm, let loose a flood of criticism more frank than friendly. It is significant that 100 per cent of the firm's clients stood solid behind them, offers to act as witness on their behalf having poured in from all over the country. This very arbitrary action was clamped down on by the court of justice, as the Public Prosecutor and Judge agreed to issue immediate orders for the release of the detained person and a cessation of all proceedings against him. So "the man recovered from the bite, the dog it was that died."

Production figures during March were: wolfram 410 tonnes, tin 256 tonnes, cupreous pyrites 56,700 tonnes. Exports for the following month of April were: wolfram 313 tonnes; tin 305 tonnes; manganese 1,500 tonnes; iron ore 10,275 tonnes; cupreous pyrites 37,098 tonnes; roasted and leached pyrites 8,934 tonnes; white arsenic 182 tonnes.

Western United States

(From Our Own Correspondent)

Portland, Oregon, May 30.

In the present rather confused situation with respect to international trade the United States finds herself on the horns of a dilemma. There is no doubt that the majority of business men recognize the desirability of a policy of "trade not aid" but there are voluble minorities as this policy would involve a drastic revision of the tariff which has long been a fundamental principle of American business economy. The mining industry is not too enthusiastic as it looks back on what has happened in recent years to the antimony and quicksilver producers and views askance the present situation in lead and zinc, in which the first quarter of 1953 shows a production decline of 12½ per cent from the corresponding 1952 period.

OPPOSITION TO RELIEF MEASURES

Different relief measures proposed have encountered opposition from one source or another, largely according to whose ox would be gored. It is quite likely that eventually there will be a sharp reduction in the tariff which will be rather bitter medicine in some quarters but it is the hope that in the long run it will bring about an adjusted condition that will enable the United States to discontinue direct financial aid to other countries. Another angle in the situation, referred to in a recent speech by Secretary of the Treasury Humphrey, is that the present administration is committed to "a sounder economy based on sounder fundamental conditions" and also a currency "fully convertible on a gold basis." Such a policy, when put into effect, may involve exchange conditions which other countries may find difficulty in meeting.

Copper production reacted promptly to decontrol of price which was made effective February 25. Mine output of 80,393 s.tons in March was the highest since May, 1952, and was 11 per cent higher than in February although, in that comparison, allowance should be made for the shorter month. Smelter and refinery production showed comparable increase. Development of new properties on a large scale continues. In Arizona San Manuel is entering into a $50,000,000 contract with Stearns-Roger, of Denver, and Utah Construction, of San Francisco, for construction of the surface works at the mine at Tiger. Not included in this contract are a housing project for 7,000 persons and a branch railroad from the mine to the Southern Pacific. The completed programme calls for the expenditure of $125,000,000 and production is expected some time in 1955.

SYSTEMATIC EXPLOITATION OF COPPER

In Nevada, Consolidated Coppermines has acquired a group of claims that gives it control of an area 15 miles long and six to eight miles wide in Pershing County. The locality has been known for years to contain a large deposit of low grade copper ore but has never been systematically exploited. An item of interest is that the original Anaconda mine at Butte, which formed the nucleus of the Anaconda Copper Co. and which has been inactive for some time, will be put on production again as a part of the Greater Butte Project. The old surface works, long a familiar Butte landmark, are being dismantled as operation will be through the new Kelly shaft. Kennecott's copper refinery at Garfield, Utah, is operating at projected capacity of 16,000 tons monthly.

Lack of zinc concentrates has forced Sullivan Mining Co. to close one of the four units of its electrolytic zinc plant in the Coeur d'Alene district in Idaho. Normal production of the unit that has closed down is 15,000 tons per year.

As part of a $1,000,000 expansion programme Bunker Hill and Sullivan is deepening its Crescent shaft from 1,200 to 3,200 ft. which will make this old working one of the principal adits of the mine. American Smelting and Refining Co. has commenced operation of a zinc fuming plant at its Selby, California smelter, oldest operating lead smelter in the United States. The plant produces a slag of 10 per cent or more zinc content. This is treated by blowing air and pulverized coal into the molten slag, by which the lead and zinc are fumed and converted to oxide. The oxide is partially reduced and cleaned of lead by further contact with coal and densified to form a product which will be shipped to the company's zinc smelter. Output of oxide will be 800 tons per month.

WORKER-MANAGEMENT RELATIONS

A wage settlement in reverse has been achieved at the Silver City, New Mexico, operations of the U.S. Smelting, Refining and Mining Co., in which the men agreed voluntarily to accept a 20 per cent reduction in wages in order to keep the property in operation during the present lead-zinc crisis. This is the only lead-zinc mine operating in the area in which 700 men have been laid off recently at other properties. Wages will be restored to the old scale as soon as prices justify. It is hardly necessary to say that the controversial Mine, Mill and Smelter Workers' Union did not participate in the negotiations.

Kaiser Steel Corporation is increasing iron ore production at its Eagle Mountain mine in California to meet the greater demand of its steel plant at Fontana which is increasing its ingot capacity by 152,000 tons per annum. A second pit is being put in operation at the mine and ore output will be increased 30 per cent to 2,200,000 tons annually. The programme calls for new crusher, magnetic separation and Heavy Media Separation plants.

Recovery of Uranium from the Main Reef Leader at Daggafontein Mines, S. Africa

In keeping with the size and position of Daggafontein Mines as a gold producer, the company's uranium extraction and sulphuric acid plants will be amongst the largest in South Africa. The South African uranium industry received comprehensive treatment in our issue of May 22, 1953, and the following article, after presenting a brief picture of the current overall situation, describes the processes used in the extraction of uranium from residue gold slime in the Daggafontein Mines plant, which will be treating material derived from the Main Reef Leader, not hitherto considered as an important source of uranium.

All reports indicate that South Africa's uranium industry will achieve considerably greater production than was visualized originally. A general picture of the birth of the industry was given in *The Mining Journal* of May 22, 1953, when it was noted that to date 21 mines on the Rand and in the Orange Free State have been authorized to produce uranium and that the list is likely to be further extended, because the overall picture presented shows that the majority of Rand gold mines are uranium bearing.

More than 500,000 samples of material from the various gold mines of the Union have been assayed for radioactivity by the laboratory unit of the Government Atomic Energy Board, according to an article appearing recently in *The South African Journal of Economics*. The assays are part of an investigation financed by the Government.

The quantity of uranium in the mill heads is in no way minimized by the several stages of processing of the gold-bearing ores for the extraction of gold. Because the major proportion of the mining and crushing costs are borne by gold as the main product, uranium becomes a by-product the extraction of which, in conjunction with the recovery of gold, becomes an economic proposition.

Mr. J. H. Viljoen, South African Minister of Mines, said recently that the capital cost of the plants now being installed was approximately £40,000,000. When these plants eventually reached full production, they would supply uranium worth approximately £30,000,000 annually to South Africa.

SUCCESS OF THE BREEDER PILE

A further factor intimating a future increase in the number of South African uranium producers is the report that world demand will increase through the success of the breeder pile at Arco, Nevada.

The significance of the success of the breeder pile to the South African uranium industry lies in the fact that the pile is able to use U238, a relatively abundant non-explosive uranium, by converting it into explosive fuel. The pile utilizes this newly made fuel to create further quantities of fuel. More non-explosive uranium is converted into fuel than is used up in the conversion process. This is revealed by the fact that only 1:140 parts of the pure uranium metal extracted from the original ore is composed of the lighter U235 atoms which may be used directly as fuel for atomic reactions, the rest being non-explosive uranium. One effect of the breeder pile is thus to increase by 140 the amount of available atomic fuel.

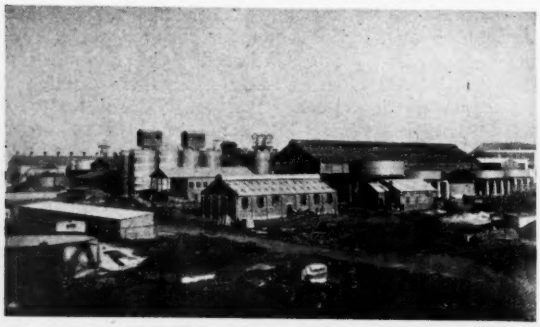
In the United Kingdom the Minister of Supply announced earlier this year that this country was building its own breeder pile, which is expected to be in operation shortly, although many difficulties still remain to be solved. Yet the greatest obstacle to the use of atomic power for industrial purposes has been overcome.

To date, the only established uranium producer in South Africa has been the large-tonnage property West Rand Consolidated, where production of uranium commenced during September of last year. Some idea of the size and profitability of West Rand's operations was contained in the first published results of uranium operations made in the Directors' report for the quarter ended December 31, 1952. This showed a net profit of £124,707 which was increased to £138,304 during the March, 1953, quarter, both figures being subject to adjustments.

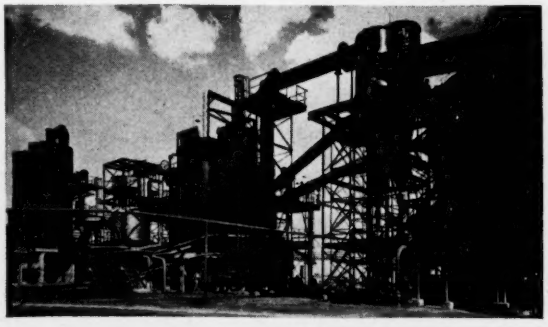
URANIUM FROM THE MAIN REEF LEADER

The new uranium plant at Daggafontein Mines which was officially opened on May 22 by Sir Ernest Oppenheimer is four times larger than that of West Rand Consolidated. Daggafontein is the first gold mining company in the Anglo American Corporation Group to produce uranium, and it is significant that the new plant will be treating material derived from the Main Reef Leader for uranium recovery. It had previously been thought that only the Kimberley Reef was an appropriate source of uranium in the area.

Daggafontein will be one of the largest uranium producers in South Africa. In December, 1950, arrangements were concluded with the Atomic Energy Board of South Africa for the company to erect a uranium-extraction plant. A sulphuric acid plant to meet the requirements of Daggafontein and other uranium producing companies was later commissioned, and the total estimated cost of the uranium and sulphuric acid plants is approximately



The uranium extraction plant at Daggafontein Mines Ltd. The combined costs of the uranium and sulphuric acid plants are estimated at approximately £3,900,000



The sulphuric acid plant at Daggafontein Mines Ltd., showing the fluo-solids reactors on right, cyclones, cooling and stripping towers, electrostatic mist precipitator and absorption towers

£3,900,000. Up to the termination of 1952, £3,614,532 had been spent on these plants, with £3,480,226 advanced by British and United States authorities, namely the Export-Import Bank of Washington and Her Majesty's Ministry of Supply, by way of loans. A revised agreement with the Atomic Energy Board provided a revised price formula in excess of the price of product agreed to at the end of 1950, and also relieved the company of capital risks incurred in plant erection, as in effect the loans were repayable solely from the sale of uranium produced.

THE EXTRACTION PROCESS

Gold extraction precedes that of uranium in the surface plants. Gold recovery is essentially an alkaline process, whereas the extraction of uranium at Daggafontein is an acid process. Treatment of ores for gold production and in the handling of residual slime are so ordered chronologically that normal flow through established gold recovery plant is not disturbed.

Because the South reduction plant at Daggafontein Mines treats Main Reef Leader ore, a relatively low uranium bearer, it is necessary to concentrate the valuable materials there by means of the flotation process. The concentrate contains iron pyrites in addition to uranium. This pyrite is used in the sulphuric acid plant at North Daggafontein.

Current residual slime and the slime from the slime dam are eventually dumped to a conditioner tank where the mixture is chemically treated and flows to flotation cells. The froth concentrate containing uraninite, iron pyrites and gold, is pumped approximately two miles to the uranium plant at North Daggafontein while tailings are pumped to a new slime dam. After thickening, the South plant concentrate plus residual slime from the North reduction works, is stored in stock tanks.

From these tanks the mixture gravitates to rotary vacuum filters where excess moisture is drawn off. The filter cake remaining is conveyed by belt to a repulper where sulphuric acid and manganese dioxide are added. At this stage the mixture becomes acidic, and in the continued sequence of the extraction process is pumped to Pachuca tanks where it is agitated by air under pressure to eventually be fed by gravity to a second group of acid proof rotary filters.

Here the uranium-bearing solution is separated from the insoluble substances in the mixture, and to ensure that the maximum of dissolved uranium is removed, the residue from the secondary filters is conveyed by belt to another repulper. Following this treatment it gravitates from stock tank to a third group of acid proof filters for the extraction of the last of the uranium-bearing solution by filtration. The leached residue slime remaining from this final filtration is pumped to the flotation plant where the pyrites is recovered for use in the sulphuric acid plant.

The uranium bearing solution which was drawn from the primary filters is a pregnant solution, and after treatment in clarifiers to remove small particles of solids is pumped to the precipitation plant where hydrated uranium oxide is obtained.

MANUFACTURE OF SULPHURIC ACID

The residue remaining from the final filtration in the uranium plant is gravitated into three conditioner tanks in the flotation plant. Reagents are added and the pulpy mixture is treated in a preliminary bank of flotation cells through which air is blown. The surface froth mixture contains iron pyrites. This is laundered, and after further conditioning the rougher concentrate is purified in flotation cells. The solids in the final, clean concentrates are pumped to a rotary filter.

The filter cake of iron pyrites concentrate is taken by conveyor to a stockpile prior to being roasted in the sulphuric acid plant. The pyritic concentrate contains approximately 40 per cent sulphur, and one ton produces about one ton of acid. Before the pyritic concentrate is used in the sulphuric acid plant, however, it is converted into a slurry by the addition of water. The slurry, containing approximately 80 per cent solids, is injected into fluo-solid reactors and is roasted at about 1,600 deg. F. in the presence of air and water.

During the roasting process the sulphur is liberated and unites with the oxygen in the air to form sulphur dioxide. After various processes, air eventually is added to this gas and it is converted into sulphur trioxide in the presence of vanadium pentoxide as a catalyst. The resultant sulphur trioxide is pumped to an absorption tower containing dilute sulphuric acid where the gas is absorbed and converted into strong sulphuric acid.

A New Uranium Bearing Mineral

Mineral research undertaken by two Columbia University mineralogists working in co-operation with the U.S. Atomic Energy Commission's Division of Raw Materials has led to the discovery of a new species of uranium-bearing mineral. The newly-found material, named Umohoite by its two discoverers, Professor Paul F. Kerr, professor of mineralogy, and Gerald P. Brophy, a graduate student assistant, consists of 48 per cent uranium, combined with molybdenum and water. Natural pitchblende, most common source of uranium, contains an average of from 50 to 65 per cent of the radioactive element.

The black, flaky mineral was obtained from the Freedom Two uranium mine at Marysvale, Utah. Some 25 lb. of ore, taken from a number of veins, was collected last summer and is still being analyzed with the Mineralogy Department's X-ray spectrometer. Discovery of umohoite came half way through this analysis; a second half of the ore samples is yet to be investigated.

A NEW SPECIES

It is now clear that the mineral is a new species not previously described. It contains molybdenum and water in addition to uranium, being a hydrous uranium molybdate. The name umohoite is given to the mineral by combining the chemical symbols, U, Mo, H, and O with the mineral suffix "ite." This follows a recent trend toward naming minerals on the basis of chemical composition where feasible, rather than after prominent scientists.

While umohoite contains about 48 per cent uranium it is not yet known how widely the mineral is distributed, occurrences thus far known being limited to one mine. Marysvale ore, however, frequently contains an unusual amount of molybdenum which could be attributed to umohoite. It is also likely that other occurrences of umohoite may be found in the Western United States.

In its origin, the new mineral is associated with pitchblende of Tertiary age, estimated by geochemists to be about 25,000,000 years old. Deeply eroded throats of old volcanos are found in the Marysvale district, with occasional hot springs not far away. Uranium is believed to have been deposited by solutions arising from some of these dying volcanos.

While small amounts of the mineral are fairly widespread in distribution, samples of pure material are only separated with great difficulty. In fact, for testing purposes, small crystals of umohoite are picked out under a microscope. The crystals appear to be irregular flat plates, but are shown by X-ray studies to be symmetrical hexagons in shape.

Application of the Dryductor Drill to Roof Bolting Practice

Although largely in the experimental stage in this country, roof bolting is an established method of current American mining practice. The process is presented as offering specific benefits in so far as safety of operation and efficiency in mining practice are concerned, and the following article describes how the Holman Dryductor drill facilitates the driving of roof suspension supports.

Although roof bolting as practised in American mines is as yet largely in the experimental stage in this country, interest in its application and suitability to British conditions has been aroused and the report of the National Coal Board for 1952 mentions that the system is being tested to discern its possible wide utilization.

In normal practice, the roof bolting process is accomplished in three stages. First, a hole is drilled in the roof face, and the manufacturers indicate that this task is speedily and conveniently accomplished by use of the Holman Dryductor and Stoperleg, as no irritation is caused to the operator by dust or sludge dropping from the hole.

The second phase comprises inserting the bolt into the drilled hole, and fastening it. In the case when a Holman Dryductor is used, this process is accomplished merely by inserting a driving head in the chuck of the drill. The third phase is that of tightening the bolt, which is accomplished by running a nut on the threaded end of the bolt with an impact wrench.

THE DRYDUCTOR AND STOPERLEG UNITS

The Dryductor is built in the form of a Handril and may be used in conjunction with a Stoperleg or, by the use of a light cradle mount, as a drifter. Its advantage to the mining industry lies in the fact that its use provides a practical solution to the problem of drilling without the use of water while yet avoiding an atmospheric dust loading. In certain mining conditions the use of water cannot be permitted and in many drilling operations falling water in the form of sludge from drilled holes causes inconvenience and loss of operating efficiency.

In operation, therefore, the Dryductor drills in the normal manner of pneumatic percussive drills with the additional factor that all grit and dust matter is drawn through the hollow drill steel and out through the rear of the machine. This effect is achieved by the installation of an Eductor in the dust line, wherein the compressed air supply is drawn from the inlet side of the air line lubricator.

The telescopic Stoperleg is particularly adapted for roof bolting duties, as it provides a long feed for a short-closed machine, and such a condition exists when roof-bolting is being undertaken. The Holman Stoperleg consists of the single telescopic and double telescopic types, and feed control is by means of a roller twist grip which supplies feed pressure increment in small but positive steps.

The recent annual report of the directors of the St. John D'El Rey Mining Company Ltd. mentions under the heading, "Underground Plant," that the introduction of the Holman Dryductor on that property has proved to be an economical and satisfactory measure. The report adds that fifteen of the units are currently in operation on various levels, and that general performance and almost complete absence of dust gives encouragement for future operations.

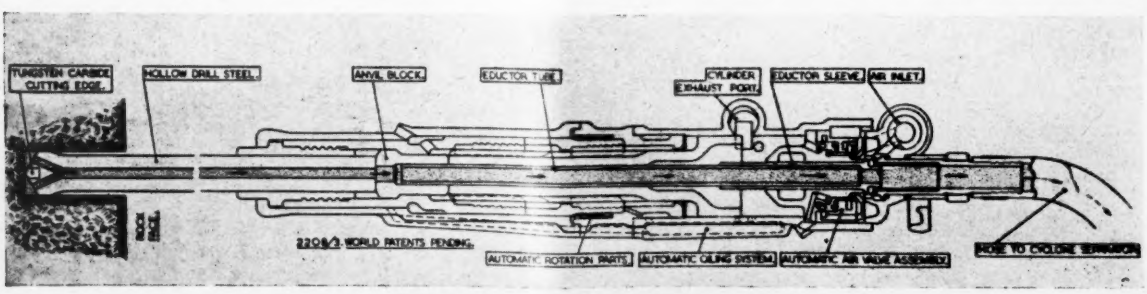
THE PRACTICE OF ROOF BOLTING

Although in the past roof bolting appeared highly illogical to mining engineers, it is nevertheless a fact that its application in the construction of beams predates mining itself. The basic principle is the "reinforcement of roof rock with steel rods inserted in the roof and anchored therein at points where the rock is least likely to be affected by stresses resulting from mining." By this reasoning, therefore, the principle is sound according to the dictates of engineering science. For roof bolting involves a method of reinforcement to rock roof that provides additional beam strength.

It is worthy of consideration that material costs may show immediate increase upon the transformation of support on a property from the conventional to the suspension-support method. Yet, should the latter method be properly installed, certain specific advantages may be anticipated. These embrace the two basic considerations of safety in operation and efficiency in mining practice, and companies that have experimented with large installations, particularly in fully mechanized mines, report six principal advantages to each of these aspects.

INCREASED SAFETY FACTOR

In so far as safety is concerned, the advantages to be gained may be listed as: (1) A systematic method of support is given at the working face—to within a few inches of the face—so that the rigid roof support provided is less likely to be shattered during blasting; (2) The support itself cannot be dislodged during blasting operations; (3) Efficiency of ventilation is increased as resistance to air is reduced; (4) Cuts of coal may be thoroughly cleared, so that explosive dust *in situ* is reduced to a minimum; (5) Clearance on all sides and overhead of roadways is improved and is more easily maintained; and (6) The general conditions in a mine are improved, as it is possible to maintain a neater



Cross section of the Holman Dryductor

and more efficient storage space for power and water lines and like installations. Indeed, it is reported that it is a common practice where roof bolting is used, to insert an eye bolt on the exposed end of the roof bolt in order to attach air and water lines and like installations. All the considerations listed add to the safer operation of a mine's productivity without reducing its efficiency quota.

These considerations in turn lead to a survey of roof bolting from the point of view of general mining efficiency, and the six advantages forwarded by mining companies as accruing from the utilization of roof bolting may be summarized as follows : (1) A loading machine can clean up a cut from rib to rib without the interference supplied by the traditional timber pieces; (2) Certain experiments have indicated that in some instances mine openings, especially rooms, may be widened considerably by installing suspension supports and thus reducing drilling and explosive costs and increasing the efficiency of loading machines through reduction of tramming time; (3) Mobile equipment can operate more speedily; (4) In normal conditions labour costs of installing the roof bolt type of support is less than required by conventional support installations; (5) Under normal conditions of terrain suspension supports may be considered as permanent, and (6) Roof bolting materials make fewer demands on an underground or shaft transportation system owing to their lack of bulk.

Holman Dryductor drilling a hole in the roof. Note absence of rock dust, only machine exhaust

Photo: Courtesy Dominion Steel and Coal Corporation of Sydney, Nova Scotia

DETERMINATION OF ROD INSTALLATION

The basic principle of suspension support practice is static, yet each mine should be regarded as an individual case when the method is installed.

In ordinary practice, because of the high back, light and hand-held pneumatic drills are used in conjunction with ratchet-type feed boards or block and tackle, and a suspension support set comprised of a channel and several rods is erected by workers who are supported on a scaffold.

It is reported that approximately 95 per cent of the rods in use are mild steel, slit-rod-and-wedge type of 1 in. diameter. Factors which have influenced their acceptance by companies are a consideration of the amount of material removed from the rod during fabrication that will not appreciably reduce tensile strength, and the decision whether the rod is rigid enough to permit it being driven over the wedge with a percussion drill.

The minimum diameter of rod is limited in use of the slit-rod-and-wedge type, as the slot is approximately $\frac{1}{8}$ in. wide and reduces the effective cross—sectional area of a 1 in. rod by approximately 16 per cent. Further, failures have been noted when excessive loading with sagging strata have caused rods to fail in tension. In these instances cup and ball fractures between the point of anchorage and the bearing plate were shown.

In addition, it is believed that the clearance of a rod in its hole is of great importance, particularly in cases where the rods lie at an angle with the vertical. The reasons presented for this belief are that the resistance to deflection of the roof beam arises not only by direct support with the rods, but also by resistance to lateral movement of the alternate rock layers, which in turn is made possible by the bearing of the rod against the sides of the hole. Further, it is considered that the less the prongs are spread by the wedge, the greater will be the bearing area afforded the anchor.

Experience has indicated that a bearing plate need only be of area sufficient to ensure against surface disintegration when rod tension is applied, provided that the immediate roof is "reasonably hard." Installations already utilized have been 8 x 8 x $\frac{1}{8}$ in. steel, 5 x 8 x $\frac{1}{4}$ in. tie plates, and several companies which use the "shin plaster" method have begun to use triangular bearing plates. These latter equipments are dished to obtain a tripod effect when an uneven roof surface is supported.

ADAPTION TO CYCLE OF OPERATIONS

Full advantage of the suspension system of roof support is only gained if it be installed at the face as soon as possible after the roof there is exposed. The installation of the suspension method entails considerable necessary investment which is now more justified than formerly owing to the concentration of mining operations through more complete mechanization which in turn has promoted the increased productivity of small working areas. Different methods of normal mining practice promote different problems of suspension—support installation. In the case of bituminous coal mining with mobile machines, the insertion of suspension roof supports has shown no increase in the time taken to install normal timber sets, and should mobile machines or continuous-miners be used, the suspension supports should be set to within a few inches of the face before cutting.

Several debatable points spring to mind when use of a portable compressor is considered, as it is doubtful whether economies can be effected by mobility of the unit or whether the compressor should be in installed in a semi-permanent location. In trackless mining a self-propelled unit in combination with jumbo or stoper mount would be the more practicable, whereas when direct loading to car areas and possible interference with transportation is to be considered, the latter semi-permanent method might provide efficient operation.

In conclusion, therefore, it appears that suspension support offers the mining industry a safe and efficient method of roof support. The method has been applied extensively under widely differing roof conditions and offers the possibility of the development of new and more efficient methods of mining. The Holman Dryductor is particularly suited to roof bolting operations, as its convenience in use is in keeping with the modern industrial practice of supplying light tools that are efficient and comfortable to use.

The Diverse Uses of Aerial Surveying

The following article exemplifies the national interest currently displayed in aerial survey operations of all types. It will be recalled that the technical aspects of aerial survey operations were discussed at some length in *The Mining Journal* of December 12 and 26, 1952.

In the autumn of last year Mr. M. Duplessis, Premier of the Province of Quebec, Canada, announced that construction was beginning on the Bersimis Project. This scheme is described as a new hydro-electric development which will raise Quebec's production of hydro-electric power by 16 per cent. The present hydro-electric output of the Province stands at 6,200,000 and the first units of the new 1,000,000 h.p. development are expected to begin operations in 1956. Quebec stands as one of the world's greatest hydro-electric producers, as its *per capita* production is 1,580 installed h.p. per 1,000 inhabitants as against 860 i.h.p. for Canada overall and 1,180 i.h.p. for Norway.

The site of the project is set in the Lawrentian Shield, beyond existing roads and railway lines, and situated approximately 100 miles north of the town of Baie Comeau, itself some half way distance between Quebec City and the Gulf of St. Lawrence. At the site of the project, the waters of La Casse join the Bersimis and drop 660 ft. within 10 miles, between cliffs 1,000 ft. in height.

AERIAL SURVEY SPEEDS FACT-FINDING

When the Quebec Hydro-Electric Commission advanced the target date of the Bersimis Project from 1960 to 1956, the Commission's consulting engineers, H. G. Acres and Co., enlisted the aid of aerial survey to speed the procurement of basic data necessary to the appraisal of the overall project. Three tasks were assigned to the Photographic Survey Corporation Ltd., of Toronto, during 1952.

The first task entailed the topographic mapping of 275 sq. miles of the project area. The first block of 50 miles was produced by the Corporation in less than a month. This area covered the dam site at the foot of La Casse, the tunnel-diversion area, and the power site. Mapping scale was 1:12,000 with 20 ft. contours, and this mapping was later extended to include the Rimouski-Leman Watersheds and a portion of the Bersimis Valley.

The second task was one of photogeological interpretation. Both the dam and tunnel projects required detailed knowledge of rock structure in the area. The Geology Division of the Photographic Survey Corporation Ltd. plotted rock outcroppings, joints and faults as well as foliation, in an enterprise that was calculated to reduce to a minimum detailed field work.

The third task was one of soils interpretation. All indications pointed to a rock—or clay—filled dam, and the Corporation's soil consultants were commissioned to discern the existence and situation of a convenient location of "borrow." By use of aerial photograph as their only method, the soils consultants identified the necessary quantities of unconsolidated materials within three miles of the dam site. With this task completed, attention was turned to the secondary requirements of gravel deposits in the vicinity of the proposed access road and similar tasks.

In subsequent operations, the Corporation has been called upon to indicate transmission line routes between the dam site and the manicouagan power plant at Baie Comeau. By use of the stereoscopic examination of aerial photography, locations were selected which met the following specifications: a maximum span of 1,200 ft. between towers with sections as long, straight and flat as possible, a route avoiding swamp and in preference following rocky ground with accessibility to suitable construction camp sites, and a proximity to lakes on which aircraft could land.

Another and similar survey is now in progress and undertaken by the same Corporation to indicate a transmission line alongside the north shore of the St. Lawrence between the Saguenay River and Quebec City.

AERIAL SURVEYING IN EAST AFRICA

An illustration of how aerial survey operations are currently being carried on in many parts of the world is the report that a Brjstol Freighter aircraft, together with two other aircraft, is engaged in an extensive air-photo survey of territory in East Africa.

The operation is being undertaken by Hunting Aerosurveys Ltd., as a preliminary to a comprehensive programme of geological and geophysical surveys in search of oil. These surveys have been planned by the D'Arcy Exploration Company, prospecting subsidiary of the Anglo-Iranian Oil Co. Ltd., in conjunction with Royal Dutch Shell. The surveys are being carried out under licence from the Governments concerned.

Operations based initially on Dar-es-Salaam and covering the coastal area of Tanganyika have already begun, and air-photo coverage will later be extended to Zanzibar and Pemba Islands, as well as to parts of Kenya which are of potential interest in so far as possible sources of oil supply are concerned.

Mass Production of Engineers in Siberia

In the near vicinity of the Kuznetsk iron and steel works in Russia is the Siberian Ordjonikidze Metallurgical Institute which has trained engineers for the Soviet iron and steel industry since 1930. The nearby Ruznetsk Works, equipped with modern plant of all types, provides a splendid training ground for students, and it is recorded that many of the five hundred former students of the Institute who have gone to employment at the Works now hold responsible positions there.

During the 22 years of its existence, the Siberian Ordjonikidze Metallurgical Institute has trained 1,794 specialist engineers, who currently are employed in the iron and steel industry throughout the Soviet Union. The quota of graduates is reported to increase annually and, during 1952, the Institute completed the training of 266 engineers while approximately 350 will complete their training this year.

The Institute is composed of three departments. These include departments of metallurgy, technology and mining, the latter being a recent addition. In addition, ten specialists courses are provided; pig iron production, steelmaking, founding, rolling, electrical metallurgy, heat treatment, mechanical equipment, coal and ore mining and electrical mining equipment. Evening and correspondence courses are also included in the service provided.

Approximately 2,500 students are currently attending the Institute, and more than 800 are now in their first year. Many nationalities are represented and the majority of the students formerly were employed in the steel industry or as miners. Members of the Institute staff are engaged in extensive research work, and more than 300 senior students are reported to be engaged on scientific problems of various kinds.

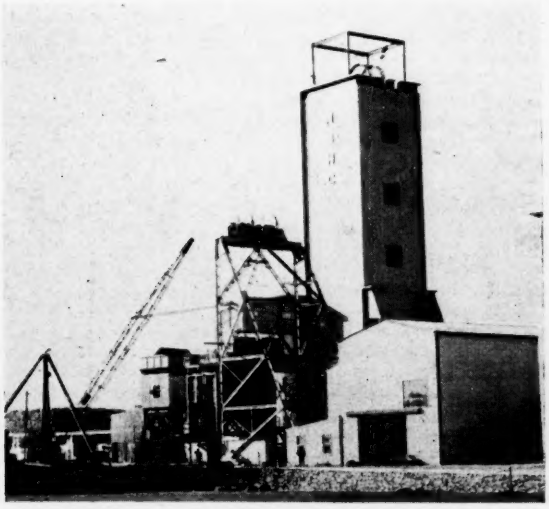
MACHINERY AND EQUIPMENT

New Broken Hill's Shaft Development Programme

Mr. John R. Govett, chairman of New Broken Hill Consolidated, gave some interesting details in his annual statement accompanying the report and accounts for the year 1952 of the progress New Broken Hill Consolidated has made with its shaft development programme.

This work is part of a ten-year programme instituted in 1945 and subsequently enlarged upon which involved the sinking and equipping of separate shafts for the haulage of men and the servicing of the ore; the provision of a separate mill on the company's own mine instead of contributing to the additional units originally proposed at the Zinc Corporation's mill; and the installation of an underground crushing station.

In September last, with the completion of the 2,600 h.p. skip winder on the haulage shaft, the surface crushing plant, crude ore conveyor and No. 1 section of the mill, the hoisting of ore through the haulage shaft and milling in the company's own mill were commenced. However, pending the completion of the service shaft, expected in 1954, the haulage shaft will have to handle men and supplies into the mine and mullock out of the lower levels and thus the haulage of ore has to be



The headframe for the haulage shaft at New Broken Hill Consolidated

confined to one shift. This means that the tonnage hauled is limited to approximately 1,000 tons per day, and while this is sufficient to maintain the mill on a two-shift basis, all ore production in excess of the one-shift capacity of the haulage shaft will continue to be handled through the Zinc Corporation's main shaft and treated in their mill until the service shaft is in operation.

The work of stripping and concreting the new service shaft, which has been sunk to a depth of 3,400 ft., was continued during 1952 although at a slower rate, the chairman said, than had been hoped. This was due to difficult ground conditions encountered and blockages in the pilot winze through which the broken rock from the stripping operations is drawn.

In order to recover some of the lost time, operations in the new service shaft have been divided into three sections. In the first section, extending from the surface to No. 8 level, 168 ft. of steel sets have been installed. In the second section, below No. 8 level, steel sets are being installed and at May 1 last, the installation of 575 ft. had been completed. In the third section, below No. 16 level, stripping of the shaft to its full size and concreting it are being carried out, and at the beginning of May of this year the shaft had been stripped down to a depth of 2,835 ft. and concreted to a depth of 2,813 ft.

However, work in the first section has been suspended while the concrete headframe, which would be similar to that for the haulage shaft illustrated on this page, is being constructed.

Readers will recall a recent article entitled "Modern Construction Practice at the New Broken Hill Consolidated Mine, Australia," published in our issue of May 15 last, dealing with some of these developments. Unfortunately, certain inaccuracies occurred in this article as will be apparent from the foregoing; notably that headframes for both shafts will be of concrete and not of steel.

New British Standards

The British Standards Institution recently issued a new British standard, for 1 per cent chromium steel castings (abrasion resisting) under catalogue B.S. 1956: 1953.

This is one of a series of British standards for steel castings for general engineering purposes and covers three grades; grades A and B, carbon-chromium, and grade C, carbon-chromium-molybdenum. Chemical composition and hardness are specified for all grades, and tensile properties are specified for one grade of carbon-chromium castings.

Copies of this standard may be obtained from the British Standards Institution, Sales Branch, 24 Victoria Street, London, S.W.1. at a price of 2s.

British Standard 1975 : 1953, "Primary cells and batteries for intrinsically safe bell signalling circuits in coal mines," has also recently been issued. This standard deals with Leclanché type primary cells and batteries which, in order to be "intrinsically safe," should be so constructed that the current is limited to a specified amount in order that the sparks produced in the signalling circuits are incapable of igniting inflammable gas. Full details of dimensions of the component parts, the composition of the electrolyte for wet cells, and requirements for the performance of complete cells are specified. Copies of the standard may be obtained at the same address as above, at a price of 2s. 6d.

B.S.I. has now published a revision of the 1938 issue of B.S. 535, "Bulbs for miners' electric lamps." This revision takes into account developments which have taken place in the field of portable mine lighting and is designed to cover the main types of bulbs now in general use. The requirements of this revised edition differ widely from those of B.S. 535 : 1938. A much shorter test life is now accepted in order to achieve the higher lumen efficiency, and the details of the specification have been altered accordingly. The revised standard is priced at 3s.

Plant and Equipment for the Fabrication and Welding of Heavy Steel Plate

One of the outstanding trends in British post-war engineering has been the development of heavy industry devoted to the production of fabricated equipment of oil refineries and the associated chemical industry. G. A. Harvey and Co. (London) Ltd. opened the first bay of a large fusion-welding shop for this class of work in 1945, which was completed in 1951.

An interesting brochure, reprinted from *Welding and Metal Fabrication* presents full details of the work carried out in this shop.

Only 20 per cent of the fabrication is carried out by manual arc welding. During recent years there has been a trend away from automatic submerged arc welding to automatic metallic arc welding with continuous coated electrodes. The automatic arc welding units are now used for internal and external seams.

A Modernistic Building Material

The Flowstrut construction system is announced by Railway Mine and Plantation Equipment Ltd., the manufacturers. The Flowstrut system comprises angles, shelving panels, stiffeners, casters and wheels, hinges and ancilliaries in the form of spanners, cutters, nuts and bolts, which may be used to construct almost any interior unit from shelving to a busbar system.

In the beams themselves, 40 holes per in. give a perforated appearance to the structure, and ensure that no detailed drawings are necessary before construction begins, little measuring, no drilling or welding. A spanner takes the place of the rivet gun and in all the manufacturers forward the system as modern in the extreme and suitable for the majority of lighter surface installations.

METALS, MINERALS AND ALLOYS

The industrial metals have been sharply affected this week by the improvement in the Far Eastern situation reflected in the settlement of the prisoners of war agreement reached in Korea. This has come at a period of the year when American industrial activity normally takes a holiday recess and prices are apt to reflect this condition. Copper and tin which are high price metals were already showing a downward tendency while lead and zinc, the price of which has been depressed, have remained steady with even a tendency to rise. Wage negotiations in the U.S. iron and steel industry are reported to be proceeding harmoniously and it is hoped that no strike will occur.

The Ways and Means Committee of the House of Representatives in Washington has voted to extend the Reciprocal Tariffs Agreement Act for another year from the 12th instant when it was due to expire. This is a distinct victory for President Eisenhower in his efforts to widen international trade. In refusing a request this week for double import duties on screen-printed scarves, the President is reported as saying that Free World co-operation demanded the most careful examination of all applications for tariff increases.

COPPER —Copper has remained very quiet and though trading of futures on the Commodity Exchange was substantial on the first two days after business started it soon dried up. An additional reason for hesitation besides the general dampening effect of the Korean truce developments was the uncertainty arising out of probable reductions in the price of Chilean metal. According to the last reports all sales have been at a standstill since the middle of May and the Central Bank is believed to be pressing the Government to modify its copper export prices. U.S. bids are said to have been forthcoming at 30-32 c. per lb.

Sales of June copper up to the end of last week are computed at about 60,000 s.tons. Demands for July are still sluggish and in view of the general outlook for the metal, consumers believe that custom smelters are contemplating some cut in their prices, unless demand improves.

The U.S. Government has signed a contract with the Banner Mining Co., Tucson, Arizona, for the production of 6,480 s.tons of refined copper over a three year period. The company's copper and molybdenum mining properties will be developed and improved and production is expected to begin in May, 1954. The Government will buy the refined copper at 31 c. per lb. f.o.b. Middle Western markets, and has an option at the market price for all molybdenum produced. Some tungsten is expected to be available as a by-product.

Kennecott intends to develop a new open-pit copper mine in Nevada, according to Mr. F. R. Milliken, vice-president in charge of mining operations. The undertaking will be a development of an ore body located near Kennecott's present Nevada operations. The ore body is 1,400 ft. long, 600 ft. wide and consists of low-grade copper ore averaging less than 1 per cent. This is the second major development undertaken recently by Kennecott in this area to add to the country's production of copper. Development work will start in the near future and full production is expected in 1954.

A minor relaxation in the stringency of the French Government control over supplies to consumers is reported from Paris. French producers may negotiate prices freely with buyers provided they submit proposed changes to the Price Director for approval five days before they come into effect. However, prices for imported copper which are fixed by the Government sponsored Import and Distribution Agency are not affected. France depends mainly on imports as domestic production from imported blister, anodes and scrap amounts to about 1,500 tonnes, a month.

LEAD.—London prices have only been affected to a very minor extent by the general reaction to the Korean settlement, while in the United States, although the market was on the quiet side, the price actually advanced yesterday to 13½ c.

The U.S. output in April was 31,049 s.tons, some 300 tons over the March figure. U.S. production has been very steady for a long time and the average monthly output for the whole of last year was 32,000 tons.

TIN.—The conclusion of an agreement over the release of prisoners of war in Korea, after the protracted discussions extending over many months, together with the apparent relaxation of tension in the Far East generally, resulted in a heavy fall in tin prices in the early part of the week. While this decline, paralleling earlier experience when the prospect of a settlement first appeared possible, is not surprising, the fundamental situation rising from the continued over-production of the metal and the uncertainty of stockpile purchases by the U.S. continuing indefinitely would probably have led to the same result in the long run.

There is evidently a strong feeling among United States consumers against the reversal of former American policy of seeking to depress prices. Representatives of the leading tin consuming industries recently met N.P.A. officials to review the subjects proposed for discussion at the meeting of the Working Party of the International Tin Study Group in Brussels next week. The consumers expressed the view that the present price of tin was sufficient to support production in the various tin producing fields, and that any programme of stabilized production and prices might encourage the revival of a tin cartel—a reflection no doubt of Mr. Symington's bogey. They did not think that either U.S. Administration or Congress would agree to such a programme, and their recommendation was that the U.S. delegation should not make any commitments at Brussels but merely report the proceedings.

The Bolivian Government is evidently becoming very fidgety about the continued failure of their efforts to force a contract out of the U.S. Government. The Bolivian Ambassador to the U.S., Sr. Victor Andrade, in a somewhat theatrical address in New York, said that the Bolivian economic position was worsening with the protraction of the discussions over a long-term buying contract and suggested that fair compensation for nationalization of the mines was dependent on a satisfactory agreement. He also stressed that the real danger was that the Communists would seize the opportunity if economic chaos developed—to some foreign observers there seems to be a considerable tint of Communism about the past activities of the miners' leader, and present Minister of Mines. The Bolivians also appear to be trying to put pressure on the Administration by representing to labour leaders, especially the A.F. of L. and the C.I.O., that Bolivian miners are being starved through the refusal of the United States to buy tin. This has drawn from the Assistant Secretary of State, Mr. Cabot, the statement that the U.S. in the past year bought more tin, including nationalized tin, from Bolivia than in any similar twelve-month period since the War. It is doubtful if the effect of these efforts to put pressure on the Administration will have the effect which the

U.K. PRIMARY METAL STATISTICS—APRIL

(long tons)

	Refined Copper			*Lead*†			*Slab zinc*			*Tin metal*		
	Apl. 1953	*Jan.-Apl.* 1953	*Jan.-Apl.* 1952	*Apl.* 1953	*Jan.-Apl.* 1953	*Jan.-Apl.* 1952	*Apl.* 1953	*Jan.-Apl.* 1953	*Jan.-Apl.* 1952	*Apl.* 1953	*Jan.-Apl.* 1953	*Jan.-Apl.* 1952
U.K. stocks beginning period	106,418§	91,548§	87,251§	13,781‖	23,090§	77,167§	23,783‖	166,050§	39,659§	2,857§	4,225§	8,004§
Imports	20,885	73,985	75,725	14,218	49,525	74,506	19,154	73,778	69,860	106	783	2,159
Production	5,586	35,085	49,330	6,508	22,771	27,689	5,640	23,117	20,704	2,414*	7,325*	9,052*
Consumption	16,108	82,895	123,866	17,361	72,693	63,615	14,231	58,271	66 790	1,397	6 450	8,208
Exports and Re-exports	137	356	180	210	9,126	63	51	127	52	702	3,083	9,668
U.K. stocks end period ‡	120,059§	120,059§	80,820§	17,114‖	17,144§	116,249§	30,821‖	30,821‖	64,872§	3,335§	3,335§	7,730§

(Source : British Bureau of Non-Ferrous Metal Statistics)

*Estimated by International Tin Study Group. †Includes imported virgin lead and English refined from domestic ore and secondary metal. §Including any Government stocks other than strategic reserves. ‖Excluding Government held stocks. ‡In addition U.K. stocks of blister copper at the end of April were 45,326 tons ; of zinc concentrates were 58,815 tons ; and of tin in ore were 3,125 tons.

Bolivian officials desire.

Production by the Texas Smelter continues on a big scale. The May output is reported at 3,100 tons, making a total for the first five months of 18,100 tons compared with 9,000 tons in the same period last year and well in excess of the same period for earlier years. Consumption of primary tin in the U.S. in January and February totalled 9,250 tons, and of secondary tin 5,172 tons.

Tin has been decontrolled in Australia and the price paid to producers of £A1,100 has fallen to around £A700. This may affect output, but in any case Australia is on balance an importer and not an exporter of tin.

Géomines, the chief Congo producer, has intimated that it will adapt its output to current tin prices and that production will not reach the 4,200 tons planned for the current book year.

ZINC.—Like the other metals zinc quotations on the Metal Exchange were slightly depressed by the more encouraging international situation, but the general situation continues to be regarded as favourable. U.S. smelter production in May was reported by the Zinc Institute as 82,422 s.tons and allowing for treatment losses 82,310 s.tons. This total comprised 40,588 Prime Western, 25,576 Special High Grade, 14,484 High Grade, and 1,692 Intermediate. Stocks at the end of the month were 92,452 tons against 94,280 a month earlier. Shipments were 84,250 tons of which the Government took 8,843 tons.

ALUMINIUM.—Strong representations from United States producers have obliged the Office of Defence Mobilization to reduce its call for stockpiling allocations in the third quarter of the year though to what extent has not yet been revealed. Despite the large imports arranged for from Canada, pressure for civilian supplies is always increasing. Among the growing applications for the metal a new aluminium alloy is greatly fancied for sucker rods for oil wells. Not only is the weight of long strain greatly reduced, but the life of such rods is said to be much greater.

Production in the United States in April was 102,071 s.tons making the total for the first four months 489,075 s.tons, compared with 303,257 s.tons in the same period of last year.

The reconstruction of German plants at Töging, Leunen, Grevenbroich and Rheinfelden is approaching completion, raising the German potential to 120,000 tons of metal a year as against 100,000 last year.

QUICKSILVER.—The high level of imports into the U.S. in the first quarter of the year, quoted last week, following on the exceptionally high arrivals for the whole of 1952 appears to have resulted in a slight reduction in the New York price which is quoted this week as $194/196 per flask for domestic delivery.

SELENIUM.—The export quota of selenium from the United States for the second quarter of the year has been fixed at 600 lb. of metal content.

TUNGSTEN ORE.—There seems to have been a slightly firmer tendency in the international market during the past week. Whereas certain European consumers are talking in terms of 290s. and 295s. c.i.f. for wolfram we have heard of at least one parcel changing hands at 305s. c.i.f., which rather indicates that consumers are not entirely realistic in their price ideas. Washington is still reported not buying, the latest information received being to the effect that the market is being mainly kept up by spasmodic demands of individual American consumers, backed to a certain extent by isolated and infrequent demand from a few European consumers. The Ministry of Materials has reduced its selling price of wolfram to 335s. per unit and of scheelite to 325s.

The London Metal Market

(From Our Metal Exchange Correspondent)

The Coronation spirit still seems in evidence and markets have been featureless with a weaker undertone.

With further increases in stocks the likelihood of a backwardation again appearing in tin seems more remote, but it must be remembered that in spite of further steps which have been taken to try and stop the export of tin to the Continent for on-shipment to America, this has again been rendered more easy by the weakening of this transferable sterling rate. The Eastern price on Thursday morning was equivalent to £721⅞ per ton c.i.f. Europe.

Demand for lead and zinc in Europe has been patchy, but in America producers are having no difficulty in disposing of their intakes and some foreign metal is still finding its way across the atlantic in spite of the U.S. import duties. American lead advanced to 13½ c. per lb. on Thursday afternoon.

The copper market remains firm but the majority of buyers are not prepared to purchase metal for shipment later than the end of July as it is felt the re-opening of the Metal Exchange for dealings in copper may cause a lower tendency and also that by then the Chileans will have been forced to adopt a realistic selling policy with the result that the present margin of world over-production will commence to influence the world price structure.

Closing prices and turnovers for the week are given in the following table:—

	June 4		June 11	
	Buyers	*Sellers*	*Buyers*	*Sellers*
Tin				
Cash	£725	£727½	£700	£702½
Three months	£725	£727½	£700	£702½
Settlement	£727½		£700	
Week's turnover	640 tons		855 tons	
Lead				
Current month	£88¼	£88½	£88	£88½
Three months	£84¼	£84½	£83¼	£83½
Week's turnover	3,300 tons		4,025 tons	
Zinc				
Current month	£72¼	£73	£70	£70½
Three months	£72¼	£72½	£70	£70½
Week's turnover	2,825 tons		4,125 tons	

JUNE 11 PRICES

COPPER

Electrolytic .. .. £252 0 0 d/d

TIN, LEAD AND ZINC

(See our London Metal Exchange report for Thursday's prices)

ANTIMONY

English (99%) delivered, 10 cwt. and over .. .. £225 per ton
Crude (70%) .. .. .. £210 per ton
Ore (60% basis) .. .. .. 20s. — 22s. nom. per unit, c.i.f.

NICKEL

99.5% (home trade) .. .. £483 per ton

OTHER METALS

Aluminium, £161 per ton
Bismuth (min. 4 cwt. lots) 17s. lb.
Cadmium (Empire), 13s. 10d./14s. 4d. lb.
Chromium, 6s. 5d./7s. 6d. lb.
Cobalt, 20s. lb.
Gold, 248s. f.oz.
Iridium, £60 oz. nom.
Magnesium, 2s. 10½d. lb.
Manganese Metal (96%-98%) £280/£295
Osmiridium, £40 oz. nom.
Osmium, £65/70 oz. nom.
Palladium, £7 15s./£8 10s. oz.
Platinum, £27/£33 5s.
Rhodium, £42 10s. oz.
Ruthenium, £25 oz.
Quicksilver, £70 5s./£70 10s. ex-warehouse
Selenium, 30s. 6d. nom. per lb.
Silver 74d. f.oz. spot and f'd.
Tellurium, 15s./16s. lb.

ORES, ALLOYS, ETC.

Bismuth .. .. 40% 6s. 9d. lb. c.i.f.
30% 5s. 6d. lb. c.i.f.
Chrome Ore—
Rhodesian Metallurgical (lumpy) £14 18s. per ton c.i.f.
" " (concentrates) £14 18s. per ton c.i.f.
" " Refractory £14 10s. per ton c.i.f.
Baluchistan Metallurgical .. £16 11s. 6d. per ton c.i.f.
Magnesite, ground calcined .. £26 - £27 d/d
Magnesite, Raw .. .. .. £10 - £11 d/d
Molybdenite (85% basis) .. 103s. 10½d. per unit c.i.f.
Wolfram (65%) .. .. .. World buying 305s. - 315s.
" " .. .. .. 335s. Selling
Scheelite .. .. World buying 290s. - 300s.
" .. .. 325s. Selling
Tungsten Metal Powder (for steel manufacture) .. .. 25s. 9d. nom. per lb. (home)
Ferro-tungsten .. .. .. 22s. 10d. nom. per lb. (home)
Carbide, 4-cwt. lots .. .. £35 13s. 9d. d/d per ton
Ferro-manganese, home .. .. £49 15s. 0d. per ton
Manganese Ore U.K. (48%-50%) .. .. .. 6s. 1d. per unit
Brass Wire .. .. .. 2s. 6½d. per lb. basis
Brass Tubes, solid drawn .. 1s. 11d. per lb. basis

THE MINING MARKETS

Prospects of an early peace in Korea, coupled with the continued apparent conciliatory attitude on the part of the Soviet, provided the basis for widespread gains in the Funds. Demand in this market remained persistent throughout the week and advances were general.

But if peace moves in Korea brought buoyancy to the gilt-edged market its effect on commodities can only be described as depressing.

Kaffirs opened the period showing all signs of continuing the improvement noticeable at the end of the previous week. Randfontein, among uranium-golds, was bought and in the Far West Rand there was some activity in East Rand Extensions. West Wits, Vaal Reefs and New Pioneers. At the end of the week, however, the market turned dull and most of the earlier rises were not fully held.

West Rand Consolidated was not noticeably affected by the speech given by Sir George Albu at the General Mining and Finance Corporation's annual meeting, in spite of the fact that what he said more than offset the disappointment caused by the company's gold and uranium profit figures for the March quarter. Last month he explained that even though the uranium plant had encountered teething troubles, results were on a par with expectations and it was thought that the Bird Reef series would show improvement as it opened up. At the annual meeting, held earlier this week, he pointed out that one effect of the discovery of uranium was to increase the value of low grade ore reefs appreciably above their worth when mined for gold alone.

O.F.S. developing mines followed much the same pattern, but President Brand, on hopes of good development results, and St. Helena, recorded small but steady advances.

Finance shares were, in general, steady. The scheme proposed by General Mining for taking over "Crits" and "Trams" saw General Mining shares unmoved, although "Crits" and "Trams" were both harder. Anglo American went a shade easier in advance of the group's half-yearly dividend announcements which were not published until after market hours.

Sir Ernest Oppenheimer's statement at the De Beers meeting that the diamond trade had come to the end of its boom and that both sections of the diamond trade, gem and industrial, were adjusting themselves to more normal business conditions and thus that some reduction in sales of both gem and industrial stones was to be expected in the future, caused the De Beers deferred and the preference to fall away, as well as turning "Amits" easier. Nevertheless, sales of gem stones for the first five months of 1953 have amounted to £21,000,000 which is approximately the same as that achieved for the corresponding period in 1952, although sales of industrials have declined sharply.

The lack of resistance to lower price levels in tin, lead and zinc resulted in perceptibly easier trends and losses were general throughout the lists. Consolidated Zinc, among Australians, fell to round the lowest price reached this year while Mount Isa shaded on the reduced interim. San Francisco was also lower. The dividend was maintained at 60 per cent, though it was pointed out, in the preliminary statement, that the profits earned in the current year would be drastically reduced if the present low metal prices continued.

Oils were a reasonably firm market. With small buying support and in the absence of selling pressure several leading issues went higher, and despite the uncertainty engendered concerning the possible effect of a truce in Korea most of the gains were consolidated.

In Canadians, dollar stocks were marked down heavily at the end of the week following the weakness on Wall Street. Rix-Athabasca were particularly weak and aluminium dropped over two points on Wednesday.

FINANCE	Price June 10	+ or — on week
African & European	2⅝	+⅛
Anglo American Corpn.	6⅛	+⅛
Anglo-French	17/6	—3d
Anglo Transvaal Consol.	22/6	.....
Central Mining (£1 shrs.)	28/9	.....
Consolidated Goldfields	44/-	—6d
Consol. Mines Selection	23/9	—7½d
East Rand Consols	3/-	.....
General Mining	3⅛	—⅛
H.E. Prop.	40/-	.....
Henderson's Transvaal	7/9xd	—3d
Johnnies	54/-	+3d
Rand Mines	3⅛	—⅛
Rand Selection	31/10½	.....
Strathmore Consol.	34/3	—1/9
Union Corp. (2/6 units)	26/9	.....
Vereeniging Estates	4	+⅛
Writs	33/3	+9d
West Wits	46/3	+1/10½
RAND GOLD		
Blyvoors	41/6	+9d
Brakpan	10/9	+6d
City Deep	20/7½	—4½d
Consol. Main Reef	21/10½	.....
Crown	33/9	.....
Daggas	3⅛	+⅛
Doornfontein	26/-	+1/-
Durban Deep	38/9	+7½d
E. Daggas	16/3	.....
E. Geduld .. (4/- units)	33/9	.....
E. Rand Props	2¼	+⅛
Geduld	4½	.....
Govt. Areas	14/3	+6d
Grootvlei	22/3	+3d
Libanon	10/9	+6d
Luipaards Vlei	24/3	+6d
Marievale	21/-	+3d
Modderfontein East	18/9	.....
New Kleinfontein	21/10½	.....
New Pioneer	21/6	+2/-
Randfontein	42/9	+2/9
Robinson Deep	11/-	+9d
Rose Deep	13/9	—7½d
Simmer & Jack	4/9	—3d
S.A. Lands	25/7½	+7½d
Springs	5/3	+3d
Stilfontein	28/1½	+1/4½
Sub Nigel	2⅝	.....
Van Dyk	6/9	.....
Venterspost	13/9	+6d
Vlakfontein	14/3	+9d
Vogelstruisbult	33/9	+9d
West Driefontein	6¼	+¼
W. Rand Consolidated	52/6	.....
Western Reefs	48/9	+1/6

O.F.S.	Price June 10	+ or — on week
Freddies	11/-	+1/6
Freddies N.	10/10½	+1/7½
Freddies S.	10/7½	+1/4½
F. S. Geduld	2⅝	+⅛
Geoffries	16/-	+1/3
Harmony	25/6	+1/-
Loraine	10/-	+1/-
Lydenburg Estates	13/-	+1/9
Merriespruit	8/6	+6d
Middle Wits	17/-	+1/6
Ofsits	38/9	+3/1½
President Brand	25/10½	+1/4½
President Steyn	23/-	+6d
St. Helena	13/6	+1/1½
Virginia Ord.	14/3	+1/-
Welkom	20/9	+1/6
Western Holdings	3⅝	+⅛
WEST AFRICAN GOLD		
Amalgamated Banket	1/7½	.....
Ariston	6/3	—1½d
Ashanti	21/7½	+4½d
Bibiani	6/1½	—1½d
Bremang	2/6	.....
G.C. Main Reef	3/6	.....
G.C. Selection Trust	6/3	.....
Konongo	2/7½	.....
Lyndhurst Deep	1/-	.....
Marlu	1/3	.....
Taquah & Abosso	3/3	+1½d
AUSTRALIAN GOLD		
Boulder Perseverance	2/4½	+1½d
Gold Mines of Kalgoorlie	11/4½	—3d
Great Boulder Prop.	9/3	+6d
Lake View and Star	15/7½	+4½d
Mount Morgan	17/-	—6d
North Kalgurli	13/-	+3d
Sons of Gwalia	6/6	+3d
South Kalgurli	7/9	+4½d
Western Mining	12/1½	—1½d
MISCELLANEOUS GOLD		
Cam and Motor	9/6	.....
Champion Reef	5/3	.....
Falcon Mines	7/-	.....
Globe & Phoenix	24/6	.....
G.F. Rhodesian	4/10½	—1½d
London & Rhodesian	4/6	.....
Motapa	2/4½	.....
Mysore	2/10½	—1½d
Nundydroog	5/9	—1½d
Ooregum	2/9	—3d
Oroville	10/-	.....

MISCELLANEOUS GOLD (contd.)	Price June 10	+ or — on week
St. John d'El Rey	21/6	—2/3
Zams	25/6	—4½d
DIAMONDS & PLATINUM		
Anglo American Inv.	4½	—¼
Casts	19/3	—3d
Cons. Diam. of S.W.A.	4	.....
De Beers Defd. Bearer	62/6	—2/6
De Beers Pfd. Bearer	14½	—¼
Pots Platinum	8/-	—4½d
Watervaal	14/-	.....
COPPER		
Chartered	15/9	—3d
Esperanza	4/-	.....
Indian Copper	4/3	.....
Messina	3⅝	.....
Nchanga	6⅝	—⅛
Rhod. Anglo-American	47/9	—6d
Rhod. Katanga	9/-	—7½d
Rhodesian Selection	13/1½	.....
Rhokana	17⅛	.....
Rio Tinto	19	—¼
Roan Antelope	12/7½	—4½d
Selection Trust	30/3xd	—2/3
Tanks	56/3	—1/9
Tharsis Sulphur Br.	41/3	—1/3
TIN (Eastern)		
Ayer Hitam	22/-	—6d
Bangrin	7/-	.....
Gopeng	7/9xd	—3d
Hongkong	6/3	.....
Ipoh	13/9	—7½d
Kamunting	8/9	—1½d
Kepong Dredging	4/7½	.....
Kinta Tin Mines	10/9	+6d
Malayan Dredging	23/9	—6d
Pahang	13/3	.....
Pengkalen	7/3	.....
Petaling	10/3	—3d
Rambutan	11/-	.....
Siamese Tin	21/6	+6d
Southern Kinta	13/9	+7½d
S. Malayan	23/9	+9d
S. Tronoh	8/9	—7½d
Sungei Kinta	13/1½	.....
Tekka Taiping	5/-	+3d
Tronoh	21/6	—6d
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	9/3	—1½d
Beralt Tin	25/3	—1/7½
Bisichi	4/-	.....
British Tin Inv.	12/3	—1½d
Ex-Lands Nigeria	3/9	—1½d

TIN (Nigerian and Miscellaneous) contd.	Price June 10	+ or — on week
Geevor Tin	10/-	.....
Gold & Base Metal	3/6	.....
Jantar Nigeria	14/-	+6d
Jos Tin Area	12/-	.....
Kaduna Prospectors	2/3	.....
Kaduna Syndicate	2/3	.....
London Tin	4/9	—3d
United Tin	2/6	.....
SILVER, LEAD, ZINC		
Broken Hill South	40/-	—1/10½
Burma Mines	1/6	.....
Consol. Zinc	22/-	—2/-
Lake George	8/6	—10½d
Mount Isa	30/-	—3/9
New Broken Hill	17/6	—10½d
North Broken Hill	48/9	—2/6
Rhodesian Broken Hill	10/7½	—3d
San Francisco Mines	21/3	—1/3
Uruwira	3/3	—1½d
MISCELLANEOUS BASE METALS & COAL		
Amal. Collieries of S.A.	45/6	—6d
Associated Manganese	43/-	—2/-
Cape Asbestos	20/3xd	—3d
C.P. Manganese	50/6	—6d
Consol. Murchison	25/-	.....
Mashaba	7½d	.....
Natal Navigation	3⅜	.....
Rhod. Monteleo	7/6	—1/3
Turner & Newall	53/6	+2/6
Wankie	14/1½	+4½d
Witbank Colliery	3⅛	+⅛
CANADIAN MINES		
Dome	$33½	.....
Hollinger	$25½	—½
Hudson Bay Mining	$74	—5½
International Nickel	$71½	—¼
Mining Corpn. of Canada	£4⅛	.....
Noranda	$118	—2
Quemont	£6	—½
Yukon	3/10½	.....
OIL		
Anglo-Iranian	5⅛	+⅛
Apex	39/4½	—7½d
Attock	26/3	.....
Burmah	44/4½xd	+7½d
Canadian Eagle	30/3xd	+1½d
Mexican Eagle	21/3	—1½d
Shell (bearer)	4⅛	+⅛
Trinidad Leasehold	24/6	.....
T.P.D.	21/3	.....
Ultramar	22/-	—3d

COMPANY NEWS AND VIEWS

Diamond Boom at an End

Sir Ernest Oppenheimer, at the annual meeting of De Beers Consolidated Mines held in Kimberley on Wednesday this week, declared that the boom times for the diamond industry had come to an end. Currently, both sections of the diamond trade, gems and industrials, were adjusting themselves to normal business conditions, and customers were following a cautious policy and regulating their purchases with a view to reducing their stocks to ordinary trade requirements. Under these circumstances, Sir Ernest added, some reduction in sales of both classes of diamonds was to be expected.

Although the sales of gem stones for the first five months of 1953 at £21,000,000 was approximately the same as for the corresponding period of 1952, sales of industrial diamonds in the same period at £6,700,000 showed a reduction of £5,000,000 when compared with a similar period in 1952. This drop in sales of industrials must not, Sir Ernest said, be attributed to an actual reduction in consumption but to other causes. In 1951 and 1952 industrial sales included very considerable quantities of diamonds purchased by the United States and other governments for stockpiling. But stockpiling purchases practically ceased at the end of last year and that accounted, to a considerable extent, for the decrease. During the current year Sir Ernest estimated that total sales of industrial diamonds would be approximately £13,000,000, and that until there was a further expansion in the use of industrial stones the annual turnover was likely to be within £2,000,000 or £3,000,000 of that figure for some years to come.

In any event, even if there is a moderate decline in the sale of gem stones during the remainder of the year it is very likely that the total sales for 1953 would be around £50,000,000. This figure would not, of course, compare with the record earnings announced during the past two years but would be on a par with the figures achieved in 1950 and would be well above those attained during the preceding 10 year period.

Uranium Production in Near Futnre

Lord Baillieu at the annual meeting of The Central Mining and Investment Corporation held at the beginning of the week, said that the uranium plant at Blyvooruitzicht, upon which capital expenditure of some £3,500,000 had been incurred, was expected " to come into production in the near future."

This plant, he said, would be capable not only of dealing with current gold-slime residues but also of drawing upon the several million tons of residues already accumulated upon the surface. Though he appreciated that the statutory demands for secrecy might long preclude the publication of technical and economic data of the operations at South African uranium plants, he expressed the hope that it might be possible to release more information in due course.

Referring to the new gold mines which have started shaft sinking between West Driefontein and Virginia he said that during 1952 approximately £36,000,000 had been expended on the equipment and development of the 19 new gold mines which had started shaft sinking since the war.

Lord Baillieu was by no means clear in his mind as to the future trend of costs in the industry. While he thought that the downward trend in commodity prices would ultimately be reflected in that part of the working costs which depended on prices outside South Africa, he pointed out that the industry spent more than £7,000,000 annually on local farm produce and thus the higher grain prices recently announced would probably lead to increases in other food prices.

More serious, however, was the average increase in cost during the year on the Group's Central Rand companies, which was equivalent, at the monetary price of gold, to 0.22 dwt., which raised the pay limit to about 3.0 dwt. per ton. Since the end of the year working costs have continued to rise. The average for the whole industry during the first four months of 1953 has been 35/7d. per ton, compared with 35/2d. in December. This presented particularly difficult problems for the low grade producers and he said he could not see any easy or early improvement.

Rand and O.F.S. Returns for May

Based on a gold price of 246/11d. per oz. against 246/10d. in April, the Rand and O.F.S. gold mining returns for May show no clear-cut trend emerging, either in respect of profits or of costs. However, it was not too discouraging to note that more than half the companies reported working costs per ton lower than in the previous month.

Of the older producers, Vogels continued to make headway while Blyvooruitzicht showed an increase in working profit of approximately £20,000 over last month's figure. On the other hand, working profit for East Champ d'Or fell to £548, and Rand Leases, whose profits have been trending downward for some time, announced a further drop to £21,997.

Of the new mines the steep rising trend of West Driefontein's profits was checked at slightly below the previous month's figure. Stilfontein from the same mill throughput earned some £5,000 more at £95,232, indicating a better grade of ore being sent to the mill. St. Helena, whose progress has been slow but steady, put another 1,000 tons through the mill raising the monthly crushing figure to 64,000 tons, and profits at £21,402 showed an advance of nearly £2,000 over the April figure. Welkom's throughput jumped 3,000 tons to 60,000 but working costs per ton rose by 4d. to 43/2d. so that the working profit was only £3,000 up at £20,010.

Company	May, 1953 Tons (000)	Yield (oz.)	Profit (£000)	Yr. ends	Current Financial Year Total to Date Tons (000)	Yield (oz.)	Profit (£000)	Last Financial Year Total to Date Tons (000)	Yield (oz.)	Profit (000)
Gold Fields										
Libanon	82	16,607	41·5	J	905	181,146	460	877	166,608	399
Luipaards Vlei	108	20,038	42·7	J	1127	211,750	527	1092	203,459	573
Rietfontein	27	6,120	25·2	D	131	29,469	127	135	29,969	139
Robinson	99	19,429	13·9	D	481	91,999	65	554	89,988	47
Simmer & J.	124	19,935	11·3	D	602	98,522	65	621	98,797	86
Sub Nigel	66	22,743	109·2	J	724	249,463	1,251	730	255,235	1,389
Venterspost	103	24,195	58·8	J	1118	261,210	669	1085	239,275	674
Vlakfontein	37	13,413	71·0	D	180	65,888	352	184	68,566	391
Vogels	100	25,250	101·1	D	473	119,736	477	395	102,297	392
West Drei	40	28,314	226·1	J	345	232,739	1,802	91	36,251	149
Anglo American										
Brakpan	117	21,013	23·7	D	570	102,028	104	569	105,020	188
Daggafontein	222	52,265	336·0	D	1101	260,149	1,698	1157	276,343	1,963
E. Daggafontein	93	16,137	49·1	D	445	77,901	243	479	85,937	321
S. A. Lands	100	18,235	50·8	D	500	90,952	260	554	100,058	365
Springs Mines	150	20,645	10·3	D	745	102,856	60	819	107,234	89
Welkom	66	13,132	20·0	D	296	58,248	78	219	33,600	L 92
Western Reefs	112	22,979	83·3	D	537	110,650	407	547	115,086	516
Central Mining										
Blyvoor	100	59,261	486·3	J	1121	674,593	5,693	1193	754,864	6,764
City Deep	164	31,492	21·8	D	790	152,737	119	770	154,918	138
Consol M.R.	182	24,570	19·8	J	1946	271,063	253	2093	286,474	463
Crown	281	43,427	38·4	D	1320	211,167	189	1333	217,076	172
D. Roodepoort	184	29,821	56·9	D	894	152,181	373	890	152,850	407
East Rand Prop.	197	42,528	111·4	D	926	201,883	508	1038	224,001	782
Modder B.	56	5,717	0·9	D	267	29,022	9	284	31,298	35
Modder E.	118	13,573	17·1	J	1267	146,227	222	1294	152,125	325
Rose Deep	79	11,422	8·6	D	367	53,945	34	419	58,136	57
Welgedacht	33	4,116	4·1	J	369	45,787	48	372	43,859	45
J.C.I.										
East Champ	24	3,813	0·5	D	124	20,179	13	155	23,814	42
Govt. G.M.A.	250	32,943	55·1	D	1212	165,494	295	1169	161,058	248
New State	30	4,422	1·0	D	166	24,752	5	224	33,001	5
Randfontein	320	39,709	25·1	D	1540	198,204	142	1749	209,969	145
Wit. Gold	60	6,459	L 8·9	D	287	32,643	L 24	297	35,378	12
Union										
East Geduld	139	41,703	310·7	D	673	201,895	1,497	723	216,919	1,711
Geduld Prop.	95	15,206	35·6	D	479	75,229	164	524	76,025	187
Grootvlie	185	39,309	229·9	D	915	195,502	1,162	968	209,827	1,343
Marievale	65	15,770	68·3	D	306	75,295	331	302	75,525	352
St. Helena	64	12,792	21·4	D	308	61,330	90	223	43,768	14
Van Dyk	90	14,438	3·7	D	453	73,237	27	535	77,414	62
General Mining										
S. Roodepoort	27	6,225	24·6	J	296	67,626	256	298	64,748	248
W. Rand Con.	232	32,271	86·0	D	1124	158,065	471	1045	163,336	611
Anglo-Transvaal										
N. Klerksdorp	10	1,426	0·7	D	51	6,984	5	55	6,154	5
Rand Leases	164	27,907	22·0	J	1883	319,630	472	2030	340,796	876
Village M.R.	34	5,254	12·0	J	372	58,071	154	375	58,302	19
Others										
N. Kleinfontein	110	14,108	25·1	D	531	68,729	138	522	68,812	455
Spaarwater	10	2,370	L 3·9	D	51	11,804	L 17	51	11,795	L 15
Stilfontein	64	19,029	95·2	D	302	83,602	392	—	—	—
W. Nigel	17	—	7·1	J	185	—	83	119	—	7

Notes.—Profit figures are in all cases figures of working profit excluding profit from sale of gold at premium prices. In case of groups marked with an asterisk (*) profit includes sundry revenue. Profit figures preceded by L indicate a loss.

Changed Outlook for Consolidated Zinc

The consolidated profit and loss account of the Consolidated Zinc Corporation for 1952 reflects clearly the fall in the prices of lead and zinc compared with the previous year. Untaxed profits declined by no less than £4,073,115 to £2,958,759 which figure was struck after charging £769,533 for depreciation compared with £701,318 in 1951.

The tax liability, reduced from £4,483,113 to £1,215,734, mirrored not only the lower level of profit and the reduced distribution from 4s. to 3s. per £1 share, but also the manner in which the valuation of stocks held by the subsidiary, Imperial Smelting Corporation, are dealt with by the tax authorities. Mr. Govett, chairman, in his statement pointed out that in each of the last few years when metal prices were rising, substantial amounts of tax were charged on unrealized stock profits. In 1952, however, although no provision need be made for the lower value of base stocks in that they have never been revalued in the books there was, he said, "a substantial stock loss chargeable for tax purposes which reduces the charge for taxation by something over £600,000."

Net profit amounted to £1,671,150 compared with £2,404,708, a decrease of £733,558. The allocation to general reserve at £1,000,000 showed an increase of £100,000 over 1951, and represented provision by the parent company of £100,000 and the remainder, £900,000, by the subsidiary companies. The group carry forward at the financial year end was £790,973 compared with £683,646 brought in.

Mr. Govett makes some interesting comments on the company's present position which has changed with much rapidity from one of great prosperity as a result of very high metal prices, to one where profits are greatly reduced.

In particular, he referred to the return of lead and zinc to private trading which presented a number of difficult problems as it involved the question of government stock disposal at a time when current production was already in excess of current requirements.

The subsequent steep decline in prices resulted in losses to producers throughout the world, the chairman said, running into many millions of pounds. If the stocks released have eventually gone into consumption, they have presumably done so only as a result of the closing down of some of the old-established mines in the United States.

Mr. Govett also referred to the long-term contracts which governments have entered into with new high-cost producers at floor prices which are now well above any ceilings that established producers can hope to reach. Thus, he added, subsidized metals from these high-cost producers would be added to market supplies and some old-established efficient producers may be closed down to make way for this metal.

Because of the lower prices prevailing for both lead and zinc the company has made a comprehensive review of all capital projects included in the present programme and also of all capital commitments outstanding, and wherever justified, capital expenditure on current projects is being curtailed and authority to proceed with new projects is being given only where there is real necessity or where the expected economic benefit to be derived from the expenditure is exceptional.

Lower Metal Prices Reduce New Broken Hill's Profits

Untaxed profits of New Broken Hill Consolidated for the year 1952 amounted to £818,780 compared with £1,338,884 in 1951, as announced in the preliminary statement and published in last week's issue.

Year to Dec. 31	*Gross Value of Products*	*Mining Costs**	*Taxation*	*Net Profit†*	*Dividend*	*Carry Forward‡*
	£	£	£	£	*s. d.*	£
1952	3,184,712	1,839,690	260,760	558,020	1 6	241,836
1951	3,292,059	1,526,402	719,860	619,024	2 6	226,663

* Excluding mine development charges of £251,684 (1951-£196,344).
† After providing £245,600 for depreciation (1951-£178,000).
‡ After allocating £400,000 to general reserve (1951-£300,000).

This reduction of £520,104 resulted from the lower average prices obtained for lead, zinc and silver than in the previous year and also from a general increase in costs, particularly of wages. But tax attracted was also very much lighter so that the net profit figure for the year of £558,020 represented a decline of only £61,004 on the result achieved in 1951. Shareholders received 1s. 6d. per 5s. share or 1s. less per share than in the previous year. This required £180,695 (£294,156) and after allocating £400,000 (£300,000) to general reserve, the forward balance was left some £15,000 stronger than at the end of 1951.

Year to Dec. 31	*Tons Milled*	*Lead Conc. Tons*	*Lead Conc. % Pb.*	*Zinc Conc. Tons*	*Zinc Conc. % Zn.*	*Silver Grade oz.*
1952	235,478	25,284	75.9	51,838	52.4	16.0
1951	211,608	22,883	76.0	46,231	52.4	16.9

Production statistics given in the above table show that the tonnage treated was approximately 24,000 tons more than in the previous year of which 45,110 tons were treated in the company's own mill, which was commissioned on September 8, last.

A note on the company's shaft development programme appears on page 701 of this issue.

Referring to operations in the current year the chairman, Mr. John R. Govett, said that it would be disappointing if output in 1953 did not substantially exceed 270,000 tons of ore of approximately the same grade as in the year under review. This, he said, together with the indications that the rise in the basic wage in Australia had been checked, should stabilize, if not reverse, the upward trend in costs. Although the directors remain confident that the mine will be among the lowest cost producers in the world the sharp decline in the prices for the company's products would have a serious effect on revenue. More than that, since the immediate outlook for metal prices is far from clear it was not possible to estimate now, with any accuracy, the probable future revenue or how much it would be possible to retain in the business to meet the balance of capital expenditure required for the completion of the company's 10-year programme.

Company Shorts

Apex Mines Maintains Dividends at 45 per cent.— The shortage of trucks was entirely responsible for the reduction in the sales output of Greenside Colliery from 1,082,590 tons to 991,547 tons, a reduction of 91,043 tons. But this did not prevent the company from expanding its profits from £157,892 to £168,189. The total dividend distribution on the £150,000 ordinary issued capital was maintained at 45 per cent per 10s. share and the carry forward at the fiscal year end was £106,485 compared with £95,049 brought in.

Ampat Tin Maintains Dividend at 30 per cent.—Ampat Tin Dredging in a preliminary statement announced the recommendation of a final dividend of 15 per cent (same) making 30 per cent for the year 1952 which is the same as the distribution in the previous year. Profit before tax, but after providing £22,831 (£49,629) for depreciation, was £321,308 compared with £467,565. Taxation liabilities required £173,000 against £258,500. Additional depreciation was £60,000 (nil), nil against £36,000 was written off expenditure on restoration and nil against £100,000 was allocated to dredge reconstruction reserve. However, contingencies reserve received £36,376 compared with £30,000 and the carry forward at the fiscal year end was higher at £70,806 compared with £59,186 brought in.

Meeting June 30. Mr. J. Ivan Spens is chairman.

Aluminium Ltd. Earnings decline in March Quarter.—Net profit of Aluminium Ltd. for the three months ending March 31, last, was $3,070,506 or 38 c. per share on the 8,186,578 shares outstanding at the end of the quarter, compared with $5,106,306 or 62 c. per share on the basis of the same number of shares in the corresponding period in 1952.

This sharp decline in earnings was largely attributable to an increase of about $4,000,000 to $12,056,294 in capital cost allowances. Consolidated sales for the quarter showed an increase from $68,323,380 to $74,067,751 but operating revenues, chiefly shipping income, showed a decline from $9,868,108 to $4,758,286.

Gold Fields Rhodesian prospecting for coal on Limpopo.—Gold Fields Rhodesian Development Company have been granted an exclusive prospecting order in respect of an area of about 100 square miles to the west of Beit Bridge, on the left bank of the Limpopo River. The order is made solely for coal, mineral oils and natural gases, and covers the period May 1, 1953, to April 30, 1956, during which time £15,000 must be spent on operation in the area.

Rhodesian Congo Border Power Corporation. — The Anglo American Corporation of South Africa and the Rhodesian Selection Trust group have announced jointly that Rhodesia Congo Border Power Corporation Ltd. has been incorporated in Northern Rhodesia as a private company.

The new company is to acquire the undertaking of Northern Rhodesia Power Corporation Ltd., a private company incorporated and controlled in the United Kingdom, which acts as co-ordinator of power supplies for the Northern Rhodesian copper producers. The whole of the issued capital of the new company is held in equal proportions by Rhokana Corporation Ltd., Nchanga Consolidated Copper Mines Ltd., Roan Antelope Copper Mines Ltd. and Mufulira Copper Mines Ltd.

Mason and Barry Make Steady Progress.—The net profit of Mason and Barry for the calendar year 1952, after all charges, including taxation liabilities of £77,125 (£68,000) and provision for depreciation of £32,885 (£14,826), was £23,040 compared with £45,038 in 1951. This net figure was swollen to £35,040 by the transfer of £12,000 from special reserve, and after allocating £5,000 (nil) to the staff pension fund, and distributing a net amount of £20,369 (£19,443) to meet the dividend payments of 15 per cent and a cash bonus of 5 per cent (same), equivalent to 4s. per £1 share on the £185,172 issued capital, the forward balance at the end of 1952 was £48,468 compared with £38,797 brought in. There was no allocation made to special reserve as against £20,000 in the preceding year.

The chairman's statement was not circulated with the accounts. Meeting, London, June 16. Mr. James Cross Brown is chairman and managing director.

West Spaarwater On Care And Maintenance Basis.—The annual report and accounts of West Spaarwater for 1952 states that no mining operations were carried out during the year under review and the property was maintained on a caretaking basis. The company continues to own mineral rights of the farm "Klippoortje" (North) No. 10, district Nigel, measuring 1532.4 morgen, over which area it holds a mining lease equal to 2206.7 claims. Mr. S. F. Dench is chairman. Meeting, Johannesburg, June 25.

Griqualand Exploration Acquires Remaining Asbestos Shares. —Griqualand Exploration and Finance Company have announced in a circular to shareholders that they have decided to acquire the remaining 75 per cent of the shareholding of The Central Asbestos Company. The shares are being acquired as from the conclusion of the last trading year—December 31, 1952—from which date the profits accrue to Griqualand Exploration. This acquisition gives Griqualand complete control of the production of the asbestos fibre from mine to manufacture and thus mining policy can be designed with close regard to the usage of the material in industry and of customers' requirements.

Purchase consideration for the remaining 75 per cent of the shareholding in The Central Company will be the issue of 130,000 shares of 4s. each. Accordingly, the directors propose to increase the company's capital to £150,000 by the creation of 350,000 new shares of 4s. each which will leave a margin of unissued shares for such further development of the joint concerns as may prove desirable in the future.

Mr. R. J. B. Stewart, managing director of The Central Company, will join the Board of Griqualand and Mr. H. J. Page, chairman of Griqualand, will become a director of The Central Company. These proposals will be submitted to shareholders at an extraordinary general meeting to be held on June 11 at Winchester House, Old Broad Street, London.

B.I.C.C.'s Record Turnover. — Record figures both in the volume and value of turnover were experienced by British Insulated Callender's Cables in 1952 were announced by the company's chairman, Sir Alexander Roger, in his statement accompanying the 1952 accounts.

Year to Dec. 31	*Untaxed Profits*	*Taxation*	*Net Profit*	*To Reserves*	*Dividend*	*Capital Expen.*
	£	£	£	£	%	£
1952	8,333,581	4,869,146	3,464,435	2,337,093	10*	2,228,147
1951	7,136,079	4,081,211	3,054,868	2,200,670	9†	1,386,792

* Paid on ordinary capital of £12,350,000.
† Paid on ordinary capital of £7,240,386.

Group profits totalled £9,592,095 against £8,288,039 reflecting a full order book for the year and the fact that materials were more freely available. This was the experience of practically all members of the B.I.C.C. group although two of the members experienced more difficult trading conditions. However, the combining with the parent company the activities of an important subsidiary enabled trading profit to be raised by £1,435,183 to £6,020,851.

Although the full effect of the flooding of the company's Erith Works at the end of January last has not yet been ascertained, Sir Alexander states that it may be £400,000.

Referring to the outlook the chairman said that competition, especially in overseas markets, is now particularly keen, and this, together with the general shortage of finance in certain overseas countries, has resulted in a substantial falling off in the rate of intake of new orders. Conditions, therefore, during 1953 are not likely to be as good as the record year of 1952, although should the present uncertainty regarding the basic prices for raw materials, particularly copper of which the cable-making industry is a heavy consumer, be cleared up, confidence in the immediate future would be a good deal stronger. Meeting, London, June 18.

Jelapang Maintains Dividend.—The report and accounts of Jelapang Tin Dredging covering the year ended December 31, 1952, showed that net profit after providing for all charges including taxation liabilities of £30,331 (£28,894) contracted to £67,773 from £78,191 in 1951. The dividend of 10s. per £1 share on the £120,000 issued capital was maintained and required £42,000. The carry forward at the end of 1952 was £104,181 compared with £73,319 brought in.

Kundang Tin Dredging in 1952.—The profit and loss account of Kudang Tin Dredging showed that the company experienced a loss over the year of £902 (loss £720). The carry forward at the fiscal year end was £2,655, compared with £35,830. This big reduction in the forward balance resulted largely from the writing off of £35,931 from dredge, plant, building, etc., so as to reduce their balance sheet value to the amount expected to be received on the relative portion of the War Damage Award.

Larut Tinfields Reduces Dividend.—The report and accounts for Larut Tinfields for the year to December 31, 1952, showed that tin ore recovered from dredging declined to 714 tons compared with 882 tons in 1951. Net profit for the year, after all charges including taxation, was £126,159 against £210,472. Dividend distribution per 5s. share on £300,000 issued capital was reduced from 4s. to 3s. per share, and required £126,000. The carry forward at the fiscal year end was £126,847 compared with £121,648 brought in.

Tweefontein Colliery Cut Dividend to 22½ Per Cent.—A preliminary profit statement issued by Tweefontein Colliery announcing financial results for the year ended March 31 last, showed that profit for the year, after all charges, including £14,168 for taxation, was £14,558 compared with £14,112 in the preceding year. A dividend of 22½ per cent on the Ordinary capital has been recommended which will absorb a net amount of £7,425 compared with 27½ per cent in the previous year. A total dividend distribution of 10 per cent (same) is being paid on the cumulative, preference and participating shares. Meeting, July 15. Dividends will be paid on July 16.

Union Steel Corporation Maintain Dividend.—The profit and loss account of Union Steel Corporation (of S. Africa) for the year 1952 showed that untaxed profits amounted to £783,463 against £803,713. Taxation was moderately heavier, £256,597 against £249,824, so that the net profit figure came out at some £27,000 lower, at £526,866 compared with £553,889. The dividend distribution was maintained at 15 per cent and a bonus of 5 per cent on both the ordinary and preference shares. The carry forward at the fiscal year end was £133,544 compared with £137,895.

African and European Investment Company has a substantial shareholding in this company. Meeting Johannesburg, June 25. Lt. Col. K. Rood is chairman.

Production at Coalbrook Colliery to be discontinued. — The directors regret to announce that, owing to a movement in certain of the strata in the haulage shaft at Coalbrook Colliery, it has not been possible to produce coal from that colliery since Monday, April 6. After full consideration the board has decided temporarily to discontinue production at Coalbrook Colliery. By arrangement with the Transvaal Coal Owners' Association (1923) (Proprietary) Ltd. the company's contractual obligations will for the time being be met by New Clydesdale Colliery which is adequately equipped to handle the additional tonnage which it will now be called upon to produce. Owing to the cessation of production at Coalbrook profits for the month of April will be detrimentally affected, but it is expected that they will be made up in the current financial year by the increased output at New Clydesdale Colliery where costs of production are substantially lower than at Coalbrook. The decision to suspend mining operations at Coalbrook Colliery in no way affects the programme which is being undertaken for the purpose of supplying coal to the new Taaibos Power Station being erected by the Electricity Supply Commission on a site adjacent to Coalbrook Colliery.

Welgedacht Repays 3s. 4d. per £1 Debenture.—In terms of the debenture trust deed the directors of Welgedacht Exploration Company have decided to repay 3s. 4d. in cash in respect

of each £1 of the original face value of the debentures, leaving 11s. 4d. in the £ outstanding. This repayment will absorb funds totalling £54,030 16s. 8d.

Repayment will be made and interest at the rate of 5 per cent per annum for the half-year will be paid on June 30 to debenture holders registered on June 9. Interest will accrue on the reduced amount of the debentures with effect from July 1.

United Brit'sh Oilfields in 1952.—Oil sales of the United British Oilfields in Trinidad during 1952 brought in £9,207,243, an increase of £287,531 over the 1951 figures. Other revenue brought the total income to £9,291,910 compared with £8,992,437. Net profit for the year, after all charges including taxation, was £527,202 against £1,077,038. The allocation to general reserve was reduced to £325,000 (£875,000) and after maintaining the dividend on the ordinary stock at 10d. per 6s. 8d. stock unit, free of tax, which required £187,500, the carry forward at the financial year end was £179,635 compared with £179,633.

The value of oil sales for the year at £9,207,000 was higher by £288,000 than in the previous year, in spite of reduced fuel oil prices during the second half of the year. This improvement was due to an increase in sales of all products of 102,174 tons.

Sir Frederick Godkin is chairman. Meeting, London, June 16.

Mining Matters

Capper Pass Awards.—The Capper Pass Awards Adjudicating Committee, on behalf of the Councils of the Institution of Mining and Metallurgy and the Institute of Metals, have made the following awards for papers published in 1952 in the "Transactions of the Institution of Mining and Metallurgy" and the "Journal of the Institute of Metals".

Fifty Pounds to Mr. Edwin Davis and Mr. S. G. Temple, for their paper on "Batch and Continuous Annealing of Copper and Copper Alloys" (J.Inst.Metals, 1952, vol. 80, pp.287-296); Fifty Pounds to Mr. C. P. Paton for his paper on "Batch Thermal Treatment of Light Alloys" (J.Inst.Metals, 1952, vol. 80, pp.311-322); Fifty Pounds to Dr. E. C. Ellwood, and Mr. T. A. Henderson, for their paper on "Some Exploratory Experiments on the Formation and Control of Magnetite during Copper Smelting Operations" (Trans. Inst. Min. Met., 1952, vol. 62, pp.55-65); Fifty Pounds to Mr. P. M. J. Gray for his paper on "The Production of Pure Cerium Metal by Electrolytic and Thermal Reduction Processes" (Trans. Inst. Min. Met., 1952, vol. 61, pp.141-170); Twenty-Five Pounds to Mr. E. A. Hontoir, for his paper on "Determination of Sulphur in Iron Pyrites" (Trans. Inst. Min. Met., 1952, vol. 62, pp.95-107).

Symposium on Prospecting:—The Northern Rhodesian Local Section of the Institution of Mining and Metallurgy is arranging a Symposium on Prospecting, to be held jointly with the Southern Rhodesian Local Association of the Institution. It will take place on Saturday, July 25, 1953, at Kitwe.

Four papers have so far been promised, under the following titles:—

"Prospecting by aerial magnetometer and other geophysical methods," by Mr. O. Weiss. "New ideas on prospecting and ore genesis due to geochemical work," by Mr. W. G. Garlick. "Surface diamond drilling operations in Northern Rhodesia," by Mr. D. L. J. Squirrell. An historical paper, by Dr. T. D. Guernsey.

Members of the Institution and others who are interested are asked to communicate with the Acting Hon. Secretary of the Northern Rhodesian Local Section, P.O. Box 137, Kitwe.

Irish Tests For Atomic Ore "Too Poor."—A sulphate mine in County Clare has been screened for uranium deposits but the result was "too poor," according to a report received from the Irish News Agency. Three leading Irish scientists, Professors G. F. G. Delaney, C. M. E. Matthews, and J. H. J. Poole, all of Trinity College, Dublin, reported to the Royal Dublin Society that Clare sulphate rock was found to contain 0.0186 per cent uranium but a content of at least 0.1 per cent was required before the ore would be of commercial value.

Colliery Haulage Accident.—A very serious accident occurred at the Newdigate Colliery near Nuneaton on Tuesday resulting in the deaths of three men and injury to fifty-nine when a rope drawing trucks in which the men were riding broke and the trucks ran backwards down a steep incline, telescoped at the bottom of the incline and piled up against the roof and walls of the road. Some of the men were able to jump out otherwise the casualties would no doubt have been heavier as there were 106 face workers in the trucks.

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THE CENTRAL MINING AND INVESTMENT CORPORATION

DIVIDEND INCOME WELL MAINTAINED

EFFECT OF RISING COSTS IN GOLD MINING INDUSTRY

The 48th annual general meeting of The Central Mining and Investment Corporation, Ltd., was held on Monday last in London, **The Rt. Hon. Lord Baillieu, K.B.E., C.M.G.** (the chairman), presiding.

In the course of his speech the Chairman said: From the profit and loss account it will be seen that our dividend income was well maintained. There are only two respects in which the figures for the year vary substantially from those of the preceding year—namely, in the profits from realization of shares and in the taxation provision. As to the former, the profit of £27,893 was barely one-tenth of that in 1951 and clearly indicates how unfavourable conditions on the Stock Markets were for us last year. As a result of these conditions we have had to make very substantial provision for diminution in the value of shares in our portfolio at December 31. £263,699 have been debited in the profit and loss account and the balance required—namely, £302,252—has been charged to investment reserve.

The gross provision for taxation at £329,069 shows a considerable reduction compared with 1951 and it is further reduced by the release of £84,000 from the provisions of earlier years now no longer required.

Our fee revenue in 1952 was swollen for the first time by receipts in payment for services rendered in the construction of plant for the production of uranium. There was, of course, some consequential increase in outgoings.

GOLD MINING INDUSTRY

During 1952 the gold mining industry as a whole was able to report an increase in both tonnage and grade of ore milled, but in spite of the fairly substantial increase in the number of oz. produced, the profit fell by more than £8,000,000, or 3s. 2d. per ton milled. Of this fall approximately 10d. per ton can be attributed to the reduction in the premium revenue received for sales of gold for non-monetary purposes and the remainder to the increase in costs which was the most striking aspect of the year's operations.

In the first month of 1952 working costs amounted to 33s. 7d. per ton. By June they had risen by only one penny, but during the latter half of the year they moved sharply upwards to the then record level of 35s. 2d. in December. The steady rise since the fourth quarter of 1949 is clearly shown on the chart issued to you in our annual report and it has, I regret to say, continued on the same curve into 1953—working costs for the first four months of this year averaged 35s. 7d.

The future trend of costs is not clear at the present time, but commodity prices are tending downwards and it is to be hoped that that part of working costs which depends upon prices outside South Africa will ultimately follow suit. It must be remembered, however, that the gold mining industry spends more than £7,000,000 yearly on local farm produce and the higher grain prices recently announced may lead to increases in other food prices also.

LABOUR SHORTAGES

Shortages of African labour and of power hampered the mines during the year in their endeavour to attain full milling capacity. Moreover, the opening up and expansion of new mines in the Far West Rand, Klerksdorp area and Orange Free State with their associated townships and ancillary services are steadily increasing the demand on labour, while the demands of the older mines are still maintained. The situation is one causing concern and special steps are being taken by the industry in the hope of improving the supply.

GROUP OPERATIONS IN SOUTH AFRICA

The results for the group, even allowing for the influence of the Blyvooruitzicht Mine—which, indeed, affects considerably the figures for the industry as a whole—are less favourable than those of the average of all producing mines.

As you will have noted, a decline in ore reserves was a characteristic of the past year's operations in our group's Central Rand mines, and to it must be added the adverse effect of the know general tendency on the Central Rand for the value of the reefs worked to diminish at depth. For these older and low-grade mines of the group, I can at present see no easy or early improvement.

The yield and working profits of the East Rand Proprietary Mines have been adversely affected by the incidence of native labour shortage, which has been primarily responsible for the declining tonnage of ore milled and also, in large measure, for the substantial rise in working costs. On this deep mine, with workings stretched along a strike distance of six miles, the complex system of vertical and sub-vertical shafts creates a heavy standing demand for men employed on non-productive tasks and a shortage of underground labour is felt with unusual severity. Not only is the scale of operations reduced, but the smaller mill tonnage and higher costs may necessitate wider changes of underground policy than experienced upon a mine of more concentrated activities.

The City Deep is another of the great mines of the group situated upon the old Rand, which, like the East Rand Proprietary, is sinking a number of sub-incline shafts below its bottom haulage level to exploit new ground to extreme depths below the surface. The serious rise in working expenditure last year was due to several factors, of which the shortage of labour and mill tonnage was one of obvious importance. Another of the mine's practical difficulties is to be associated with conditions of rock pressure and air temperature experienced at increasing depths which are giving rise to operational and financial problems of some complexity.

On the Far West Rand the Blyvooruitzicht Mine continues to show great strength. Its production of gold in 1952 amounted to 783,000 oz.—over 100,000 more than any other mine in South Africa—at an average grade of 12.2 dwt. per ton. Although the mill capacity is 120,000 tons per month, the company milled only an average of 107,000 tons per month and operation to full capacity remains dependent upon a sufficient improvement in the supply of underground native labour.

NEW GOLD MINES

During the year under review, a total of approximately £36,000,000 was expended upon the equipment and development of the nineteen new gold mines which have started shaft sinking since the war between West Driefontein and Virginia. Four of these mines are now producing and, on seven others, first-stage mill construction is either complete or so far advanced as to be ready for service at short notice.

Some of the other companies are now following up shaft inter-sections of good grade ore with encouraging results of reef development. During the first quarter of the current year, no less than 75,000 ft. of development was done by non-producing mines in the Orange Free State, though, partly due to the amount of essential dead-work that has to be done after shaft completion, only 15 per cent of this footage was effective in proving the value and characteristics of the Basal Reef. Shortly, more mines will be opening out and there promises to be a widespread acceleration in the rate at which knowledge of the distribution and tenor of ore values accumulates.

URANIUM

An important milestone in the history of mining in the Union and in the economy of the country was reached in October when the first uranium extraction plant at the West Rand Consolidated Mines was started up.

Two gold mining companies of the group—Blyvooruitzicht and Harmony—are among the potential producers of uranium. The big installation at Blyvooruitzicht, upon which capital expenditure of approximately £3,500,000 financed by Government loans, has been incurred, is expected to come into production in the near future. This plant will be capable, not only of dealing with current gold slime residues, but also of drawing additionally upon the several million tons of residue already accumulated upon the surface.

The arrangements regarding the disposal of the uranium are that it will be sold to the South African Atomic Energy Board which will reimburse the producers on a sliding scale dependent on production costs. Taxation on uranium profits will be assessed according to the formula applicable to gold mining and will be calculated on the combined results of gold and uranium production.

It is to be hoped that it will be possible, in due course, for shareholders to be informed in more detail of the operations at South African uranium plants, though it is appreciated that the statutory demands for secrecy may long forbid the publication of technical and economic data.

OIL

The results of Trinidad Leaseholds, Ltd., for the year to June 30 last were satisfactory. The company continued its deep drilling exploration policy, and while no major discovery of oil was made, some success was achieved in shallow drilling on certain fields with the result that oil reserves were improved.

It again gives me great pleasure to express the thanks of the Board, for the loyal and efficient work of the group's staff at home and abroad, and I do this in no formal way for I have every reason to know and appreciate the good service which they continue to give to the furtherance of the group's interests.

The report was adopted.

DE BEERS CONSOLIDATED MINES, LIMITED

(Incorporated in the Union of South Africa)

GROUP'S STRONG FINANCIAL POSITION

SIR ERNEST OPPENHEIMER ON INDUSTRY'S DEVELOPMENT

The 65th Ordinary general meeting of De Beers Consolidated Mines, Ltd., was held on June 10 in Kimberley.

Sir Ernest Oppenheimer, the chairman, who presided, in the course of his speech, said:

The consolidated profit and loss account shows that the group profit for the year, after providing £7,840,000 for taxation, was £19,076,000, to which has been added the sum of £6,614,000 in respect of adjustments in diamond stocks from the nominal value of £1, at which they were previously shown in the respective companies' accounts, to cost of production in the case of the producing companies and in the case of the Diamond Corporation, to cost of purchase, making a total net profit for the year of £25,690,000 in which the outside or minority shareholders have an interest to the extent of £2,368,000, including their proportion of dividends declared by subsidiary companies, the balance of £23,322,000 being attributable to your company. To this sum has been added an amount of £19,038,000 being the unappropriated balance at December 31, 1951, after deduction of the initial contribution to De Beers Pension fund and an adjustment in respect of minority interests, and this, together with the credit in respect of the reserve for allowances to retired employees, gives a total available for appropriation and distribution applicable to the company of £42,632,000. Out of this amount £15,782,000 has been transferred to reserves, £750,000 provided for depreciation of Government and local authority securities, and £8,964,000 has been declared in dividends to the shareholders of your company, leaving an unappropriated balance of £17,136,000, of which £7,465,000 is in your company's own accounts, and £9,671,000 is your company's interest in the unappropriated balances in the accounts of its subsidiary companies.

BALANCE-SHEET FEATURES

The consolidated balance-sheet shows total assets at £105,038,000, which includes the sum of £13,832,000, being the net excess of cost of investments in subsidiary companies over their nominal value, less amounts written off, and after adjustments on consolidation. This sum is covered by capital reserves on the liability side of the consolidated balance-sheet, of which share premium account amounts to £10,053,000 and other capital reserves to £22,182,000.

Current assets, loans to other companies and investments total £66,722,000 and exceed all liabilities to the public including minority shareholders' interests, by £34,927,000.

I am sure shaeholders will agree that our group is in a very strong financial position. The adjustment of diamond stocks in the accounts from a nominal value of £1 to cost of production in respect of our stocks and those of our associated producing companies and to cost of purchase in the case of the Diamond Corporation is a change in procedure which was decided on in the light of advice from our auditors. Your directors hope that the disclosure of this information will remove the erroneous impression that the diamond producers hold huge stocks of diamonds (whole bags full) and could, at will, double or treble the supply, but do not do so in order to maintain an artificial shortage and keep prices at an excessively high level.

It will be illuminating to shareholders to know that at the end of 1952 the total stock held by the De Beers Consolidated Company was only £311,947, at cost of production; by the Consolidated Diamond Mines of South-West Africa, Ltd., only £414,055, at cost of production: while the Diamond Corporation stock amounted to £5,782,832 valued at cost of purchase.

I would add that the stocks of all other producers have also been reduced to a bare minimum.

CONTINUITY OF DIAMOND PRODUCTION

Another erroneous impression that exists in some quarters is that even though we may not have large stocks we mine in such a way as to restrict production to a level calculated to cause an artificial shortage and keep the price of diamonds at unreasonably high levels. This view is contradicted by two important principles which operate in the diamond trade. The first is that the selling arrangements in force contain provisions by which each producer is guaranteed, over a period of years, that, however bad the general trade conditions are, his sales will not fall below an agreed minimum. As a result, there is always continuity of production, and diamond mines are kept in operation through bad times as well as good. The second is that the industry has always equipped its mines to operate at their optimum capacity. When the trend of prices and demand has warranted it, considerable sums have immediately been spent in reopening old mines which previously could not be exploited economically.

Finally, I can state that we have no agreement with any producer providing for a restriction of output. On the contrary, being represented on the Boards of the most important producers, I can say that their mining operations are conducted on a scale dictated by the nature of their deposits and the full capacity of their equipment.

CECIL RHODES CENTENARY

We celebrate this year, the centenary of the birth of the founder of our company, and it is therefore appropriate that to-day's address should contain a fuller account of the development of the diamond trade and of your company than is customary on these occasions. The chairman, in a lengthy survey, then reviewed the period from the discovery of diamonds in the area until the death of Cecil John Rhodes, and the 50 years thereafter. He continued:

The momentous events of the last 50 years; the two world wars, and the unprecedentedly severe and prolonged depression of the '30's, combined with our special difficulties, had of necessity important repercussions on the fortunes of your company. During the depression we had to cease operations intermittently and postpone the payment of Preference dividends.

When times improved, your directors, remaining ever conscious of these serious setbacks, followed a conservative dividend policy and built up substantial reserves.

The accounts presented to-day will have shown you that the De Beers Company has accumulated £7,400,000 in excess of liabilities, and the Consolidated Diamond Mines of South-West Africa, Ltd., in which De Beers has a 96 per cent interest, £7,000,000. The Premier Company will be able to repay its outstanding loans this year, and if the Government approves, we propose to accumulate reserve funds of £1,000,000, before declaring any dividends. Shareholders will observe that we now possess the funds necessary to assure continuity of operations.

However, we have achieved more, as during recent years we have considerably strengthened and remodelled the sellling organization.

CO-OPERATIVE SELLING ARRANGEMENTS

The marketing of the gem diamonds is now conducted by the Diamond Purchasing and Trading Company, Ltd., and its associated company, The Diamond Trading Company, Ltd. The marketing of industrial diamonds is done through Industrial Distributors (1946), Ltd., and its 100 per cent subsidiary, Industrial Distributors (Sales), Ltd. The great majority of selling companies' share capital is, however, held by the important diamond producing companies, not only those of this group, but also those operating outside the Union and South-West Africa. In effect we have, therefore, placed the selling of gem and industrial diamonds on a co-operative and, therefore, more permanent basis. The selling companies have cash resources of:

Gem companies	£7,404,000
Industrial companies	6,605,000
Making a total of	£14,009,000

They are thus amply financed for all contingencies. To my mind this is of special importance and significance because in this manner the risk of being compelled to force diamonds on an unwilling market is removed and the maintenance of prices greatly facilitated. The surplus funds in the hands of producers, together with the resources of the trading companies, assure continued mining operations in quiet times and will enable us to face temporary trade depressions without financial worry.

We decided on the establishment of a separate selling organization for industrial diamonds so as to ensure that the maximum quantity of industrial diamonds should always be available, irrespective of the demand for gem diamonds. Continuity of operations of which I have just spoken, is of greatest importance for the industrial section of our business and, of course, for industry generally.

PRESENT PROSPECTS

The chairman outlined the functions of the company's subsidiary, The Diamond Corporation, the history of which he described as an uninterrupted endeavour to preserve and cement co-operation between all producers, and referred to the formation of De Beers Investment Trust, Limited. He continued:

The boom times have come to an end, and both sections of the diamond trade, gem and industrial, are adjusting themselves

to normal business conditions. Our customers are wisely following a cautious policy, and regulate their purchases with a view to reducing their stocks to ordinary trade requirements. Under these circumstances, some reduction in sales of both classes of diamonds was to be expected.

It is gratifying to be able to tell you that gem sales for the first five months of 1953 amounted to £21,000,000 which is approximately the same as for the first five months of 1952. We anticipate some reduction in the demand for the remaining months of the year, but all-in-all 1953 will be a satisfactory year for the gem section of our business.

Sales of industrial diamonds for the first five months of 1953 amounted to £6,700,000 against £11,800,000 for the similar period last year, a reduction of £5,000,000.

This drop in sales must not be attributed to a reduction in the actual consumption of industrial diamonds, but to other causes.

We estimate that total sales of industrial diamonds for 1953 will be approximately £13,000,000. Moreover, until there is a further expansion in the use of industrial diamonds, annual sales are likely to be within £2,000,000 or £3,000,000 of that figure for some years to come.

The report and accounts were adopted.

RIO TINTO COMPANY LIMITED

TAXATION OFFSETS IMPROVED RESULTS

PROGRAMME OF OVERSEAS EXPLORATION

THE EARL OF BESSBOROUGH'S SPEECH

The 80th annual general meeting of Rio Tinto Company, Ltd., was held on June 11 at Winchester House, Old Broad Street, London, E.C.2, **The Rt. Hon. the Earl of Bessborough, G.C.M.G.** (the chairman), presiding.

Mr. H. A. Mellor (London manager and secretary) read the notice convening the meeting and the report of the auditors.

The chairman said: Gentlemen,—The report and accounts are already in your hands and, if you agree, I propose to take them as read. (Agreed.)

Turning to the accounts for the year 1952, you will have observed that the profit carried to appropriation account of £705,108 is a decrease over 1951 of £238,907. Briefly stated, the simple explanation for this is taxation. Your company's trading profit increased from £144,164 to £291,730, but the confiscatory scale of taxation imposed upon us reduced our trade investment income to £377,884, as compared with £758,170.

This year's Finance Bill contains some palliatives and temporary reliefs which are welcome. They do not, however, represent more than a first short step in the right direction, and I consider that early relief of a more fundamental nature is of imperative importance. Exhortations to private enterprise to carry out large-scale mineral development in the Commonwealth cannot be implemented by mining companies, bereft by taxation of an overwhelming proportion of their revenue. Nor has any attempt yet been made to put us on a level footing with the mining industry elsewhere, as in Canada, for example, as regards treatment of capital outlays and other taxation concessions necessary in an industry in which are involved such high risks as that of mining. Your company is carrying out a modest programme of exploration overseas, but it cannot be expected that under present conditions this country will play its proper and, I believe, essential part in the development of our Commonwealth resources.

PROFIT REMITTANCES FROM SPAIN

You will recall that in my speech last year I was able to indicate that arrangements had been concluded for the resumption of sterling remittances of profits and that certain sums had already been received. I regret that I have to record an almost complete cessation of these remittances during the last few months. We continue to make representations with a view to obtaining a resumption of them.

MINES IN SPAIN

The mines in Spain maintained full production during the year and sales of pyrites were 943,731 tons as opposed to 951,173 tons for 1951. Once again production costs have risen and, notwithstanding frequent representations, the prices being paid to the company for internal sales of copper, sulphur and pyrites are below cost. There are indications, however, that attention is being given to this matter, and I hope that before long the position will improve. In the meantime there has been some reduction in the sale of export pyrites, and though I think that this is of a temporary nature it is all the more important that internal prices should be readjusted quickly, for the higher prices obtained for pyrites exported will not secure an adequate profit under present conditions.

I paid a visit to Spain in October, 1952, accompanied by the managing director, during which we were received in Madrid by the Minister of Industry and by the Minister of Commerce. We also paid a visit to the mines where we found work proceeding satisfactorily under the direction of our general manager in Spain.

BALANCE SHEET

Turning for a moment to the balance sheet, your company's investments in Rhokana and Nchanga, which as you know are our principal investments in Rhodesia, remain unchanged. In spite of a certain downward tendency in copper prices I am confident that these investments will continue to be, as in the past, one of the most valuable assets of the company. The market value of the company's quoted investments at the end of 1952 stood at £11,607,524.

EXPLORATION AND DEVELOPMENT

As stated in the directors' report, exploration of a long-term nature is being started in Africa, notably in Northern Rhodesia. It is not expected that there will be anything of interest to report for some time to come.

Your company has also formed a Canadian company with the object of carrying out exploration activities in that country as well.

In Scotland work has been started, in association with Siamese Tin and Bangrin Tin, on dewatering the old lead workings at Wanlockhead and Leadhills. In addition, we have taken a small participation in the Commonwealth Development Finance Company, Limited, and also in the British Newfoundland Corporation, Limited.

ADMINISTRATION

No changes in the Board have occurred since our last meeting.

You will have taken notice of the extraordinary general meeting which is to follow this meeting. The "Objects" clauses of the memorandum of association have not been altered since the formation of the company 80 years ago, and your directors consider that it would be advisable for the scope of these "Objects" to be widened so as to bring them more into line with the present-day needs of this company.

DIVIDENDS

As stated in the report the Board recommend that the dividend on Ordinary shares should be maintained as in 1951 at the rate of 15 per cent, free of tax. On account of the heavy load of taxation they have only been able to recommend a bonus on this occasion of 5 per cent, making a total payment of 20 per cent, free of tax, on the Ordinary shares.

THANKS TO STAFF

We have ever been fortunate in this company in the service we have received from our staff at home and overseas. Once more I express to them all on your behalf our appreciation of their loyalty and devotion to the company's interest.

The report and accounts were adopted and the dividend of 15 per cent, free of tax, and bonus of 5 per cent, free of tax, were approved.

The retiring directors, Sir Eric Gore Browne, D.S.O., O.B.E., Mr. A. T. Gough, O.B.E., M.C., and Monsieur Etienne du Castel, D.S.O., were re-elected and the other formal business duly transacted.

At the subsequent extraordinary general meeting a resolution regarding the "Objects" clauses of the memorandum of association was approved.

The proceedings terminated with a vote of thanks to the chairman, directors and staff.

DIVIDENDS

Cam and Motor Gold 20%
Consolidated Co. Bultfontein 7.3125d. (July 28)
Frontino Gold Mines 7½% (July 8)
Griqualand West Diamond 2s. 10.2d. (July 28)
Goodyear Tyre and Rubber 11½%*
Gold and Base Metal Mines of Nigeria 15% *i* (July 3)
Kepong Dredging 5% *i* (June 30)
Mount Isa Mines 5% *i* (July 18)
New Jagersfontein Mining 2½% (July 28)
Rezende Mines Ord. 8½% *i*
San Francisco Mines of Mexico 60%
Scottish Australian Mining 3% (July 17)
Selayang Tin 30% (July 31)

i interim *tax free

CENTRAL PROVINCES MANGANESE ORE

RESULTS CONSTITUTE A NEW RECORD

CONTINUED WORLD DEMAND

MR. H. R. HOLMES ON THE SATISFACTORY PROSPECTS

The forty-fifth annual general meeting of The Central Provinces Manganese Ore Company, Ltd., was held on June 8 in London, **Mr. H. R. Holmes,** chairman and managing director, presiding.

Mr. A. Linton, M.C. (director and secretary) read the notice convening the meeting and the report of the auditors.

The Chairman said: Ladies and gentlemen—The report and accounts for the year ended December 31, 1952, have been in your hands for some time and I propose with your permission to take them as read. (Agreed.)

Before asking for your approval of the accounts, I would like to make a few comments on the figures which appear in the balance-sheet and profit and loss account.

Last year I expressed the opinion that the prospects for 1952 were satisfactory, subject to there being an improvement in railings during the second half of the year. I am glad to say that this opinion has been justified, as the balance on trading account of £2,887,767 constitutes a new record for the company.

This result has been possible owing to the continued demand for our ore in the world's markets and to the prices at present prevailing.

BURDEN OF TAXATION

Of this balance, taxation takes the enormous sum of £2,041,000, and included in this figure is £425,000 Excess Profits Levy. Taxation is a very serious matter for us, because, as I said last year, our company is subject to the full rate of tax obtaining in India. If the proposals contained in the Finance Bill, 1953, become law, the unilateral relief, which at present is limited to 75 per cent of United Kingdom taxes, will be increased to 100 per cent, but no substantial benefit from this can accrue to your company until the expiration of the incidence of Excess Profits Levy, which, under the Bill, will continue for the year 1953.

Of the total taxation, Indian taxes amount to £1,512,000, and, in addition, we paid about £800,000 in India by way of export duty on the ore we shipped during 1952, while royalty on the ore railed was over £200,000, making altogether a total of more than £2,500,000. Furthermore, we give employment to many thousands of Indians, whose wages and bonuses, and the many amenities provided for them, amount to a very large sum annually.

Income from investments is higher at £44,001, as compared with £30,500, although the total holding of securities is the same. This is because some of the stock was bought in the second half of 1951 and consequently did not attract the full year's interest for that year.

On the debit side of the profit and loss account, depreciation of fixed assets at £38,996 is only a little higher than the previous year's figures at £37,896, in spite of the fact that the fixed assets in the balance-sheet have risen from £444,046 to £641,936. This is because the depreciation on the buildings erected and machinery bought in 1952 is not charged until 1953.

APPROPRIATIONS

Your directors recommend that, out of the net profit available, the following appropriations should be made: To staff benefit fund, £30,000; to workers' welfare fund, £10,000; to general reserve, £100,000; to contingencies reserve, £75,000. An interim dividend of 1s. 3d. per unit, free of tax, has already been paid, and it is proposed that a final dividend of 2s. 3d. per unit, free of tax, plus a bonus of 2s. 6d. per unit, free of tax, should be paid, together absorbing £600,000. This will leave £192,604 to be carried forward, as compared with £185,066 brought in.

LABOUR RELATIONS

As regards the staff benefit fund, as I said last year, it is essential that this fund be built up whenever we can afford to do so, in order to provide something for both our European and Indian staff when the time comes for them to retire. With taxation at its present level it is impossible for anyone to save sufficiently for retirement, as you no doubt well know, and I feel sure that this allocation will have your approval.

As regards the Workers' Welfare Fund, you are probably aware that the Government of India are very keenly interested in the welfare of all work people employed in industry. As you will see from the balance-sheet we spent £9,984 during the year on this welfare work. The £10,000 which we propose to appropriate to this fund is to replace this expenditure.

The health of our labour force in India continues to be good, and constant attention is being given to housing, sanitation, water supply, and the control of disease, particularly malaria. In the accounts we have again provided for a sum sufficient to give those of our work people who qualify for it by service during the year, a bonus on similar lines to that drawn by the staff. The Contributory Provident Fund for our work people, which came into operation on January 1, 1952, is working satisfactorily.

We have always had the welfare of our labour at heart, and have in the past, without pressure from the Government done much to improve the conditions under which they work and live. We hope that, with the co-operation of the Government and the trade union, labour relations will remain on the same satisfactory footing as they have been for many years past.

BALANCE-SHEET FEATURES

Turning to the balance-sheet, you will notice on the assets side that the value of the manganese ore stocks has risen from £530,828 to £617,003. This does not mean that the total tonnage is higher, because the contrary is the case, but there were more stocks at the ports awaiting shipment and these stocks having borne the cost of railway freight, are valued on a higher basis.

Proceeds outstanding on ore sales were £913,784 as compared with £440,564 for the previous year, the increase being due to the larger number of shipments afloat on December 31, 1952, than in the previous year.

There is no change in our holding of British Government securities, but during the current year the market value has appreciated by about £90,000.

The cash at bank and in hand at December 31, 1952, is approximately equal to the total of cash and tax reserve certificates shown in our previous accounts. The £200,000 tax reserve certificates were used during the year in payment of taxation.

On the liabilities side of the balance-sheet, the figure of £1,472,699 appearing under reserve for future taxation represents Indian and United Kingdom income-tax on the profits for the year under review less amounts already paid on account in India. The item £456,276 shown under current liabilities for accrued taxation comprises the balances of taxation for previous years.

DIRECTORS' VISIT TO MINES

Earlier this year two of your directors—Mr. Bartlett and myself—visited the mines in India when we made a thorough examination of our properties, and in consultation with your general manager, and the several mine managers, came to decisions about many outstanding matters. We still cannot get all the labour we require though there has been an improvement in this respect, and it is therefore important that we proceed with our programme of mechanization, which so far has proved to be very successful.

Generally speaking, we found the mines in very good condition with development work ahead of ore extraction. This position will be still further improved when we get more machinery installed.

Last year I referred to the heavy media separation plant which we are installing at our Dongri Buzurg Mine. This has taken longer to complete than I estimated, but the work is now well advanced and I hope that it will be started up later this year.

CURRENT YEAR'S PROSPECTS

The demand for our ore in the world's market continues and prices remain firm. The usual improvement in our railings during the second half of the year took place as I anticipated in my speech last year, and we were able to implement all our contracts. I think I may say that the prospects for the current year's trading are satisfactory.

As no doubt you are aware, we have had for many years now excellent relations with the largest buyers of manganese ore in the world and it has taken many years to build up these very desirable connections. It is unfortunate, therefore, that these large buyers have expressed dissatisfaction with the varying methods adopted at the ports in India in assessing the export duty on manganese ore. We are doing what we can to minimize this irritation to our buyers, with a view to retaining their good will. We feel that it is of primary importance to aim at maintaining a market of a lasting nature for Indian manganese ore in these important countries, particularly as in course of time we may have to meet severe competition from other sources of supply which are in process of being developed.

TRIBUTE TO STAFF AND AGENTS

Again I wish to emphasize the excellent work of the staff both in India and in London, and also of our shipping agents in India, Messrs. James Finlay and Co. Ltd. I am sure that they will appreciate the thanks of the stockholders which, with your approval, I propose to convey to them.

I am glad to say that our relations with the Government authorities in Delhi and with the State Government of Madhya Pradesh continue on a satisfactory basis.

I now beg to move: "That the report of the directors and statement of accounts as at December 31, 1952, be and are hereby approved and adopted, and that the profits be appropriated as recommended by the directors." I will ask Major Herring to second the motion, and before putting it to the meeting I shall be glad to deal with any question which stockholders may wish to ask.

Major A. C. Herring, V.C., A.C.A., seconded the resolution which was carried unanimously.

The Board's proposal of a final dividend of 2s. 3d. per unit, free of tax, and a bonus of 2s. 6d. per unit, free of tax, was also approved.

The retiring director, Major A. C. Herring, V.C., A.C.A., was re-elected, and the remuneration of the auditors, Messrs. W. A. Browne and Co., having been fixed, the proceedings terminated with a vote of thanks to the chairman, directors and the staff, both at home and abroad.

HALKYN DISTRICT UNITED MINES

The 25th annual general meeting of Halkyn District United Mines Limited was held on June 4 at Chester. The Chairman, **Mr. R. W. Bankes, C.B.E.,** presided. The following details of operations during 1952 are taken from the directors' report as submitted to the meeting and the statement of the chairman.

On October 1, 1952, a proposal to reduce the nominal issued capital of the company from £205,675 15s. to £82,270 6s. and to return the difference of £123,405 9s. to members by repaying 3s. out of each 5s. unit of stock was approved at a special general meeting. The reduction was sanctioned by the High Court on January 19, 1953, and became effective on January 26, 1953, and the greater part of the £123,405 9s. has now been repaid to stockholders.

Production of lead concentrates, which, as in the previous year, was derived mainly from lodes 530 and 524, increased to 2,590 tons (2,155) and production of zinc concentrates at 353 tons (266) also showed an increase.

The main cross-cut south was advanced further about 968 ft., but to date no further lode has been cut.

Limestone operations, which were again hampered by adverse weather conditions, continued during the year at approximately the same level as during 1951.

The accounts show a profit for 1952 carried to appropriation account of £124,449 (£164,490). After provision of £80,500 net (£100,971) for tax and £17,059 (£28,715) for writing down various capital assets the available balance, including £11,847 brought forward from the previous account and a capital profit of £301, is £39,038. The balance carried forward, after providing £16,968 (net) for the proposed dividend of 9d. per unit of stock, is £22,070.

The chairman concluded his statement, which included a warning that current prices both for lead and zinc were substantially below the average prices on which the profit for 1952 was earned, by expressing the Board's appreciation of the efficient services rendered by the General Manager, Mr. G. W. Cradduck, and his staff.

The report and accounts were adopted and the dividend of 9d. per unit of stock was confirmed.

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NOTICE IS HEREBY GIVEN that DIVIDEND No. 48 of 3 per cent for the half-year ending June 30, 1953, being at the rate of 6 per cent per annum, has been declared PAYABLE to stockholders registered in the books of the Corporation at the close of business on June 30, 1953, and to persons presenting Coupon No. 48 from Preferred Stock Warrants to Bearer.

The dividend is declared in the currency of the Union of South Africa and becomes due on July 1, 1953. Dividend Warrants will be posted from the Head and London Offices on or about August 7, 1953.

The dividend is payable subject to the usual conditions which can be inspected at the Head and London Offices of the Corporation.

The Preferred Stock Transfer Books and Register of Members will be closed from July 1, 1953, to July 8, 1953, both days inclusive.

Holders of Stock Warrants to Bearer are notified that the dividend is payable at Barclays Bank (Dominion, Colonial and Overseas), Circus Place, London Wall, E.C.2, or at the Banque de l'Union Parisienne, 6 and 8, Boulevard Haussmann, Paris, on or about August 10, 1953. Coupons must be left four clear days for examination.

The effective rate of Non-Resident Shareholders' Tax is 6.225 per cent.

By Order of the Board,

London Office: W. E. GROVES,
11 Old Jewry, E.C.2. *London Secretary.*
June 10, 1953.

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DECLARATION OF DIVIDENDS

NOTICE IS HEREBY GIVEN that DIVIDENDS have been declared PAYABLE to shareholders registered in the books of the undermentioned companies at the close of business on June 30, 1953.

The dividends are declared in the currency of the Union of South Africa and become due on July 1, 1953. Warrants will be posted from the Head and London Offices on or about August 7, 1953.

The dividends are payable subject to the usual conditions which can be inspected at the Head and London Offices of the companies.

The Transfer Books and Register of Members will be closed in each case from July 1, 1953, to July 8, 1953, both days inclusive.

Holders of Share Warrants to Bearer are notified that the dividends are payable at Barclays Bank (Dominion, Colonial and Overseas), Circus Place, London Wall, E.C.2, or at the Banque de l'Union Parisienne, 6 and 8, Boulevard Haussmann, Paris, on or about August 10, 1953, the respective coupons being as set out in the following tabulation. Coupons must be left four clear days for examination.

Name of Company (Each of which is incorporated in the Union of South Africa)	Dividend No.	Coupon No.	Rate of Dividend Per Share in Union of South Africa Currency	Effective Rate of Non-Resident Shareholders' Tax
			s. d.	%
Anglo American Investment Trust Ltd. ..	27	—	5 0	6·45
Brakpan Mines Ltd. ..	81	81	6	7·5
Daggafontein Mines Ltd.	41	41	3 0	7·5
East Daggafontein Mines Ltd.	27	—	9	7·5
The New Era Consolidated, Ltd.	66	—	6	7·425
The South African Land & Exploration Co., Ltd.	30	30	1 3	7·5
Springs Mines, Ltd. ..	63	63	1½	7·5
Wn. Reefs Exploration & Development Co., Ltd.	24	—	1 3	7·5
West Rand Investment Trust Ltd.	11	—	7½	7·5

By Order of the Boards,
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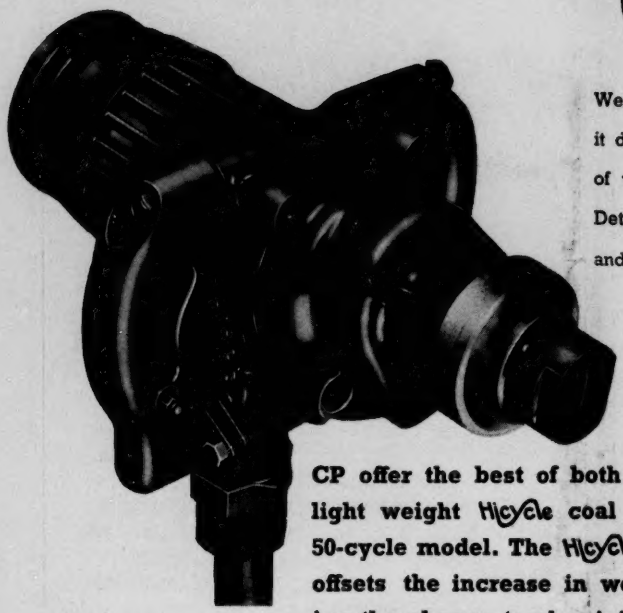

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